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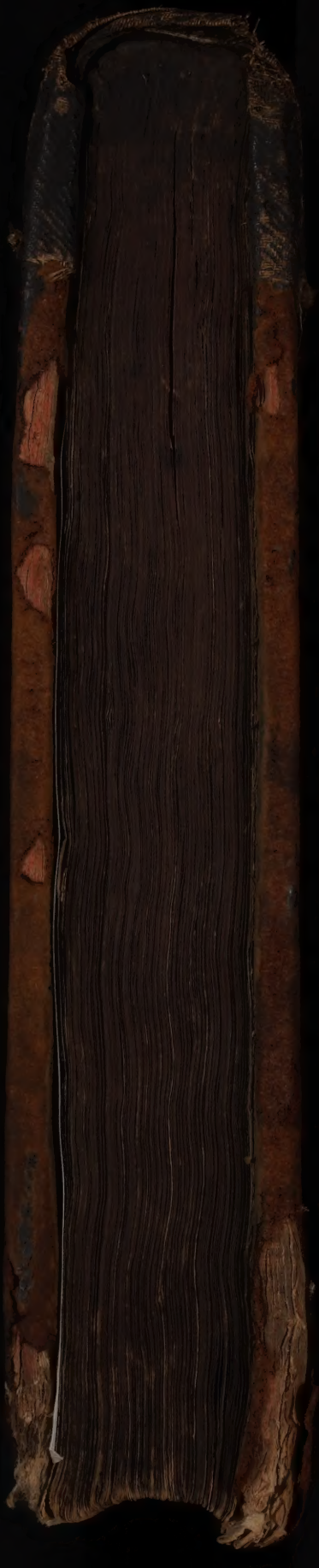

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A very Peculiar Vol.

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March the 14th. 1645.

I Have perused these Learned Animadversions upon the Common Tenets and Opinions of men in former and in these present times, Entituled Pseudodoxia Epidemica; *and finding them much transcending vulgar conceipt, and adorned with great variety of matter, and multiplicity of reading; I approve them as very worthy to be Printed and Published.*

IOHN DOVVNAME.

Pseudodoxia Epidemica:

OR,

ENQUIRIES

INTO

Very many received

TENENTS,

And commonly presumed

TRUTHS.

By THOMAS BROVVNE Dr. of Physick.

IUL. SCALIG.

Ex Libris colligere quæ prodiderunt Authores longe est periculosissimum; Rerum ipsarum cognitio vera è rebus ipsis est.

LONDON,

Printed by [illegible] *Dod*, and are to [illegible] 1646.

John Gregory

TO THE READER.

OUld Truth diſpenſe, we could be content, with Plato, that knowledge were but Remembrance; that Intellectuall acquiſition were but Reminiſcentiall evocation, and new impreſsions but the colouriſhing of old ſtamps which ſtood pale in the ſoul before. For, what is worſe, knowledge is made by oblivion; and to purchaſe a clear and warrantable body of Truth, we muſt forget and part with much wee know. Our tender Enquiries taking up Learning at large, and together with true and aſſured notions, receiving many, wherein our renewing judgements doe finde no ſatisfaction; and therefore in this Encyclopædie and round of knowledge, like the great and ex-

emplary wheeles of heaven, wee muſt obſerve two Circles: that while we are daily carried about, and whirled on by the ſwindge and rapt of the one, wee may maintaine a naturall and proper courſe, in the ſlow and ſober wheele of the other. And this wee ſhall more readily performe, if we timely ſurvey our knowledge; impartially ſingling out thoſe encroachments, which junior compliance and popular credulity hath admitted. Whereof at preſent wee have endeavoured a long and ſerious *Adviſo*; propoſing not onely a large and copious Liſt, but from experience and reaſon, attempting their deciſions.

And firſt wee crave exceeding pardon in the audacity of the Attempt; humbly acknowledging a worke of ſuch concernment unto truth, and difficulty in it ſelfe, did well deſerve the conjunction of many heads: And ſurely more advantageous had it beene unto Truth, to have fallen into the endeavours of ſome cooperating advancers, that might have performed it to the life, and added authority thereto: which the privacie of our condition, and unequall abilities cannot expect. Whereby notwithſtanding wee have not beene diverted, nor have our ſolitary attempts beene ſo diſcouraged, as to deſpaire the favourable looke of learning upon our ſingle

ſingle and unſupported endeavours.

Nor have wee let fall our penne, upon diſcouragement of contradiction, unbeleeſe, and difficulty of diſſwaſion from radicated beliefs, and points of high preſcription; although we are very ſenſible how hardly teaching yeares do learn; what roots old age contracteth into errours, and how ſuch as are but twigges in younger dayes, grow Oaks in our elder heads, and become inflexible unto the powerfulleſt arme of reaſon. Although we have alſo beheld, what cold requitals others have found in their ſeverall redemptions of truth; and how their ingenuous enquiries have been diſmiſſed with cenſure, and obloquie of ſingularities.

Some conſideration we hope from the courſe of our Profeſsion, which though it leadeth us into many truths that paſſe undiſcerned by others, yet doth it diſturbe their communications, and much interrupteth the office of our pens in their well intended tranſmiſsions: and therefore ſurely in this worke attempts will exceed performances: it being compoſed by ſnatches of time, as medicall vacations, and the fruitleſſe importunity of Vroſcopy would permit us. And therefore alſo perhaps it hath not found that regular and conſtant ſtile, thoſe infallible experiments, and thoſe aſſured determinations, which the ſubject ſome-

Inſpection of Urines.

ſometime requireth, and might be expected from others, whoſe quiet doors and unmoleſted hours afford no ſuch diſtractions. Although who ſhall indifferently perpend the exceeding difficulty, which either the obſcurity of the ſubject, or unavoidable paradoxologie muſt often put upon the Attemptor, will eaſily diſcerne, a worke of this nature is not to bee performed upon one legge, and ſhould ſmell of oyle if duly and deſervedly handled.

Our firſt intentions conſidering the common intereſt of Truth, reſolved to propoſe it unto the Latine republike and equall judges of Europe; but owing in the firſt place this ſervice unto our Country, and therein eſpecially unto its ingenuous Gentry, we have declared our ſelfe in a language beſt conceived. Although I confeſſe, the quality of the Subject will ſometimes carry us into expreſsions beyond meere Engliſh apprehenſions; and indeed, if elegancie ſtill proceedeth, and Engliſh Pennes maintaine that ſtream wee have of late obſerved to flow from many, wee ſhall within few yeares bee faine to learne Latine to underſtand Engliſh, and a work will prove of equall facility in either. Nor have wee addreſſed our penne or ſtile unto the people, (whom Bookes doe not redreſſe, and are this way incapable of reduction) but unto the know-

ing

ing and leading part of Learning; as well understanding (at leaſt probably hoping) except they be watered from higher regions, and fructifying meteors of knowledge, theſe weeds muſt loſe their alimentall ſappe and wither of themſelves; whoſe conſerving influence, could our endeavors prevent, wee ſhould truſt the reſt unto the ſythe of time, and hopefull dominion of truth.

Wee hope it will not bee unconſidered, that wee finde no open tract, or conſtant manuduction in this Labyrinth; but are oft-times faine to wander in the America and untravelled parts of truth: For though not many years paſt, Dr. Primroſe hath made a learned & full Diſcourſe of vulgar Errors in Phyſick, yet have we diſcuſſed but two or three thereof. Laurentius Ioubertus, by the ſame title led our expectation into thoughts of great releef; whereby notwithſtanding we reaped no advantage; it anſwering ſcarce at all the promiſe of the inſcription. Nor perhaps (if it were yet extant) ſhould wee finde any farther Aſsiſtance from that ancient peece of Andreas, pretending the ſame title. And therefore wee are often conſtrained to ſtand alone againſt the ſtrength of opinion; and to meet the Goliah and Gyant of Authority, with contemptible pibbles, and feeble arguments, drawne from the ſcrip and ſlender ſtocke of our ſelves. Nor have wee indeed

deed ſcarce named any Author whoſe name we doe not honour; and if detraction could invite us, diſcretion ſurely would containe us from any derogatory intention, where higheſt pennes and friendieſt eloquence muſt faile in commendation.

And therefore alſo wee cannot but hope the equitable conſiderations and candour of reaſonable mindes. We cannot expect the frowne of *Theologie* herein; nor can they which behold the preſent ſtate of things, and controverſie of points ſo long received in Divinity, condemne our ſober enquiries in the doubtfull appertinancies of Arts, and Receptaries of Philoſophy. Surely Philologers and Criticall Diſcourſers, who look beyond the ſhell and obvious exteriours of things, will not be angry with our narrower explorations. And wee cannot doubt, our brothers in Phyſicke (whoſe knowledge in naturals will lead them into a nearer apprehenſion of many things delivered) will friendly accept, if not countenance our endeavours. Nor can we conceive it, may be unwelcome unto thoſe honoured Worthies, who endeavour the advancement of Learning: as being likely to finde a clearer progreſsion, when ſo many rubbes are levelled, and many untruths taken off, which paſſing as principles with common beliefes, diſturb

the

the tranquility of Axiomes, which otherwiſe might bee rayſed. And wiſe men cannot but know, that Arts and Learning want this expurgation: and if the courſe of truth bee permitted unto its ſelfe, like that of Time and uncorrected computations, it cannot eſcape many errours, which duration ſtill enlargeth.

Laſtly, wee are not Magiſteriall in opinions, nor have wee Dictator-like obtruded our conceptions, but in the humility of Enquiries or diſquiſitions, have only propoſed them unto more ocular diſcerners. And therefore opinions are free, and open it is for any to thinke or declare the contrary. And wee ſhall ſo farre encourage contradiction, as to promiſe no diſturbance, or reoppoſe any Penne, that ſhall Elenchically refute us, that ſhall onely lay hold of our lapſes, ſingle out digreſsions, Corollaries, or ornamentall conceptions, to evidence his own in as indifferent truths. And ſhall only take notice of ſuch, whoſe experimentall and Iudicious knowledge ſhall ſolemnly looke upon it; not onely to deſtroy of ours, but to eſtabliſh of his owne, not to traduce or extenuate, but to explaine, and dilucidate, to adde and ampliate, according to the laudable cuſtome of the Ancients in their ſober promotions of Learning. Vnto whom notwithſtanding, wee ſhall not contentiouſly re-

rejoyne, or onely to justifie our owne, but to applaud or confirme his maturer assertions; and shall conferre what is in us unto his name and honour. Ready to bee swallowed in any worthy enlarger: as having acquired our end, if any way, or under any name wee may obtaine a worke, so much desired, at least, desiderated of truth.

T. B.

THE

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THE

THE FIRST BOOK:
OR,
GENERALL PART.

CHAP. I.
Of the Causes of Common Errors.

THE first and father cause of common Error, is the common infirmity of humane nature; of whose deceptible condition, although perhaps there should not need any other eviction, then the frequent errors, we shall our selves commit, even in the expresse declarement hereof: Yet shall wee illustrate the same from more infallible constitutions, and persons presumed as farre from us in condition, as time, that is our first and ingenerated forefathers, from whom as we derive our being, and the severall wounds of constitution, so may wee in some manner excuse our infirmities in the depravity of those parts, whose traductions were pure in them, and their originalls but once removed from God. Yet notwithstanding (if posterity may take leave to judge of the fact, as they are assured, to suffer in the punishment) were grossely deceived in their perfection, and so weakly deluded in the clarity of their understanding, that it hath left no small obscurity in ours, how error should gaine upon them.

For first, they were deceived by Satan, and that not in an invisible insinuation, but an open and discoverable apparition; that is, in the form of a Serpent; whereby although there were many occasions of suspition, and such as could not easily escape a weaker circumspection, yet did the unwary apprehension of Eve take no advantage thereof. It hath therefore seemed strange unto some, shee should be deluded by a Serpent, or subject her reason unto a beast of the field, which God had subjected unto hers. It hath empuzzeled the enquiries of others to apprehend, and enforced them unto strange conceptions, to make out

how without feare or doubt ſhe could diſcourſe with ſuch a creature, or heare a Serpent ſpeake, without ſuſpition of impoſture. The wits of others, have been ſo bold as to accuſe her ſimplicity in receiving his temptation ſo coldly, and when ſuch ſpecious effects of the fruit were promiſed, as to make them like gods, not to deſire, at leaſt not to wonder he purſued not that benefit himſelfe; and had it been their owne caſe would perhaps have replied, If the taſte of this fruit maketh the eaters like gods, why remaineſt thou a beaſt? If it maketh us but like gods, we are ſo already. If thereby our eyes ſhall be opened hereafter, they are at preſent quicke enough to diſcover thy deceit, and we deſire them no opener to behold our owne ſhame. If to know good and evill be our advantage, although we have free will unto both, wee deſire to performe but one, we know 'tis good to obey the Commandement of God, but evill if we tranſgreſſe it.

They were deceived by one another, & in the greateſt diſadvantage of deluſion, that is the ſtronger by the weaker: For Eve preſented the fruit, and Adam received it from her. Thus the Serpent was cunning enough to begin the deceit in the weaker; and the weaker of ſtrength, ſufficient to conſummate the fraud in the ſtronger. Art and fallacy was uſed unto her, a naked offer proved ſufficient unto him: ſo his ſuperſtruction was his ruin, & the fertility of his ſleep, an iſſue of death unto him. And although the condition of ſex & poſterity of creation might ſomewhat extenuate the error of the woman: Yet was it very ſtrange and inexcuſable in the man, eſpecially if as ſome affirme, he was the wiſeſt of all men ſince, or if as others have conceived, he was not ignorant of the fall of the Angels, and had thereby example and puniſhment to deterre him.

They were deceived from themſelves, and their owne apprehenſions, for Eve either miſtooke or traduced the commandement of God. Of every tree of the garden thou maieſt freely eat, but of the tree of knowledge of good and evill thou ſhalt not eat, for in the day thou eateſt thereof, thou ſhalt ſurely dye. Now Eve upon the queſtion of the Serpent returned the precept in different tearmes, You ſhall not eat of it, neither ſhall you touch it leſt perhaps you dye. In which delivery, there were no leſſe then two miſtakes, or rather additionall mendacites; for the commandement forbids not the touch of the fruit, and poſitively ſaid ye ſhall ſurely dye, but ſhe extenuating replied, *ne forte moriamini*, leſt perhaps ye dye. For ſo in the vulgar tranſlation it runneth, and ſo is it expreſſed in the Thargum or Paraphraſe of Jonathan. And therefore although it be ſaid, and that very truly that the divell was a liar from the beginning, yet was the woman herein the firſt expreſſe beginner, and falſified twice before the replye of Satan, and therefore alſo to ſpeak ſtrictly, the ſin of the fruit was not the firſt offence, they firſt tranſgreſſed the rule of their own reaſon, and after the commandement of God.

They

They were deceived through the conduct of their ſenſes, and by temptations from the object it ſelfe, whereby although their intellectualls had not failed in the theorie of truth, yet did the inſervient and brutall faculties controle the ſuggeſtion of reaſon: Pleaſure and profit already overſwaying the inſtructions of honeſty, and ſenſuallity perturbing the reaſonable commands of vertue. For ſo is it delivered in the text; That when the woman ſaw that the tree was good for food, and that it was pleaſant unto the eye, and a tree to be deſired to make one wiſe, ſhe tooke of the fruit thereof and did eat. Now hereby it appeareth, that Eve before the fall, was by the ſame and beaten way of allurements inveigled, whereby her poſterity hath been deluded ever ſince; that is thoſe three delivered by St. John, the luſt of the fleſh, the luſt of the eye, and the pride of life, wherein indeed they ſeemed as weakly to faile as their debilitated poſterity, ever after. Whereof notwithſtanding ſome in their imperfections, have reſiſted more powerfull temptations, and in many moralities condemned the facility of their ſeductions.

Againe, they might for ought we know, be ſtill deceived in the unbeliefe of their mortality, even after they had eat of the fruit. For Eve obſerving no immediate execution of the curſe, ſhe delivered the fruit unto Adam, who after the taſte thereof, perceiving himſelfe ſtill to live, might yet remaine in doubt, whether he had incurred death, which perhaps he did not indubitably believe, untill he was after convicted in the viſible example of Abel; for he that would not believe the menace of God at firſt, it may be doubted whether before an ocular example hee believed the curſe at laſt, and therefore they are not without all reaſon, who have diſputed the fact of Cain, that is although he purpoſed to miſchiefe, whether he intended to murther his brother, or deſigned that, whereof he had not beheld an example in his owne kinde, there might be ſomewhat in it that he would not have done, or deſired undone, when he brake forth as deſperately as before hee had done unmannerly, My iniquity is greater then can be forgiven me.

Some nicities I confeſſe there are which extenuate, but many more that aggravate this deluſion, which exceeding the bounds of our Diſcourſe, and perhaps our ſatisfaction, we ſhall at preſent paſſe over. And therefore whether the ſinne of our firſt parents were the greateſt of any ſince, whether the tranſgreſſion of Eve ſeducing, did not exceed that of Adam ſeduced, or whether the reſiſtibility of his reaſon did not equivalence the facility of her ſeduction, wee ſhall referre it unto the Schoolman. Whether there were not in Eve as great injuſtice in deceiving her husband, as imprudence in being deceived her ſelf, we leave it unto the Moralliſt. Whether the whole relation be not Allegoricall, that is, whether the temptation of the man by the woman, bee not the ſeduction of the rationall, and higher parts by the inferiour and femi-

nine faculties : or whether the tree in the middeſt of the garden, were not that part in the centre of the body, on which was afterward the appointment of circumciſion in males, we leave it unto the Thalmudiſt. Whether there were any policie in the devill to tempt them before conjunction, or whether the iſſue before tentation might in juſtice have ſuffered with thoſe after, we leave it unto the Lawyer. Whether Adam foreknew the advent of Chriſt, or the reparation of his error by his Saviour, how the execution of the curſe ſhould have been ordered, if after Eve had eaten, Adam had yet refuſed. Whether if they had taſted the tree of life before that of good and evill, they had yet ſuffered the curſe of mortality; or whether the efficacie of the one had not overpowred the penalty of the other, we leave it unto God : for he alone can truly determine theſe and all things elſe, who as he hath propoſed the world unto our diſputation, ſo hath he reſerved many things unto his owne reſolution, whoſe determinations we cannot hope from fleſh, but muſt with reverence ſuſpend unto that great day, whoſe juſtice ſhall either condemne our curioſities, or reſolve our diſquiſitions.

Laſtly, man was not only deceiveable in his integrity, but the Angells of light in all their clarity. He that ſaid he would bee like the higheſt did erre if in ſome way he conceived himſelfe not ſo already; but in attempting ſo high an effect from himſelfe, hee miſ-underſtood the nature of God, and held a falſe apprehenſion of his owne; whereby vainly attempting not only inſolencies, but impoſſibilities, he deceived himſelfe as low as hell. In briefe, there is nothing infallible but God, who cannot poſſibly erre. For things are really true as they correſpond unto his conception, and have ſo much of verity, as they hold of conformity unto that intellect, in whoſe Idea they had their firſt determinations : And therefore being the rule he cannot bee irregular, nor being truth it ſelfe conceiveably admit the impoſſible ſociety of error.

Chap. II.

A further illuſtration of the ſame.

BEing thus deluded before the fall, it is no wonder if their conceptions were deceitfull, and could ſcarce ſpeake without an error after; for what is very remarkable (and no man I know hath yet obſerved) in the relation of Scripture before the flood, there is but one ſpeech delivered by man, wherein there is not an erronious conception; and ſtrictly examined, moſt hainouſly injurious unto truth. The penne of Moſes is briefe in the account before the flood, and the ſpeeches recorded are ſix.

The firſt is that of Adam, when upon the expoſtulation of God, he re-

replyed; I heard thy voice in the garden, and becauſe I was naked, I hid my ſelfe: In which reply, there was included a very groſſe miſtake, and if with pertinacity maintained, a high and capitall errour: for thinking by this retirement to obſcure himſelfe from God, he infringed the omniſciency and eſſentiall ubiquity of his Maker; who as he created all things, ſo is he beyond and in them all, not onely in power, as under his ſubjection, or in his preſence, as being in his cognition, but in his very Eſſence, as being the ſoule of their cauſalities, and the eſſentiall cauſe of their exiſtences. Certainely his poſterity at this diſtance and after ſo perpetuated an impayrement, cannot but condemne the poverty of his conception, that thought to obſcure himſelfe from his Creator in the ſhade of the garden, who had beheld him before in the darkeneſſe of his Chaos, and in the obſcurity of nothing; that thought to flye from God, which could not flye himſelfe, or imagined that one tree ſhould conceale his nakedneſſe from Gods eye, as another had revealed it unto his owne. Thoſe tormented ſpirits that wiſh the mountaines to cover them, have fallen upon deſires of leſſe abſurdity, and choſen wayes of leſſe improbable concealement; though this be alſo as ridiculous unto reaſon, as fruitleſſe unto their deſires; for he that laid the foundations of the earth, cannot be excluded the ſecrecy of the mountains, nor can there any thing eſcape the perſpicacity of thoſe eyes which were before light, and unto whoſe opticks there is no opacity. This is the conſolation of all good men, unto whom his ubiquity affordeth continuall comfort and ſecurity: And this is the affliction of hell, unto whom it affordeth deſpaire, and remedileſſe calamity. For thoſe reſtleſſe ſpirits that flye the face of the Almighty, being deprived the fruition of his eye, would alſo avoid the extent of his hand; which being impoſſible, their ſufferings are deſperate, and their afflictions without evaſion, untill they can get out of Triſmegiſtus his circle, that is, to extend their wings above the univerſe, and pitch beyond ubiquity it ſelfe.

The ſecond is that ſpeech of Adam unto God, the woman whom thou gaveſt me to be with me, ſhe gave me of the Tree, and I did eate: this indeed was a very unſatisfactory reply, and therein was involved a very impious errour, as implying God the Author of ſinne, and accuſing his Maker of his tranſgreſſion: as if he had ſaid, If thou hadſt not given me a woman I had not beene deceived: Thou promiſedſt to make her a help, but ſhe hath proved deſtruction unto me; had I remained alone, I had not ſinned, but thou gaveſt me a conſort, and ſo I became ſeduced. This was a bold and open accuſation of God, making the fountaine of good the contriver of evill, and the forbidder of the crime an abetter of the fact prohibited. Surely, his mercy was great that did not revenge the impeachment of his Juſtice; and his goodneſſe to be admired, that it refuted not his argument in the puniſh-

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ment of his excuſation, or onely purſued the firſt tranſgreſſion without a penalty of this the ſecond.

The third was that of Eve. The Serpent beguiled me, and I did eate. In which reply there was not onely a very feeble excuſe, but an erroneous tranſlating her owne offence upon another. Extenuating her ſinne from that which was an aggravation, that is to excuſe the fact at all, much more upon the ſuggeſtion of a beaſt, which was before in the ſtricteſt termes prohibited by her God. For although we now doe hope the mercies of God will conſider our degenerated integrities unto ſome minoration of our offences, yet had not the ſincerity of our firſt parents, ſo colourable expectations, unto whom the commandement was but ſingle, and their integrities beſt able to reſiſt the motions of its tranſgreſſion: And therefore ſo hainous conceptions have riſen hereof, that ſome have ſeemed more angry therewith then God himſelfe, being ſo exaſperated with the offence, as to call in queſtion their ſalvation, and to diſpute the eternall puniſhment of their Maker. Aſſuredly with better reaſon may poſterity accuſe them, then they the Serpent, or one another; and the diſpleaſure of the Pelagians muſt needs be irreconcileable, who peremptorily maintaining they can fulfill the whole Law, will inſatisfactorily condemne the non-obſervation of one.

The fourth was that ſpeech of Cain upon the demand of God, Where is thy Brother? and he ſaid, I know not. In which negation, beſide the open impudence, there was implyed a notable errour; for returning a lye unto his Maker, and preſuming in this manner, to put off the Searcher of hearts, he denied the omniſciency of God, whereunto there is nothing concealable. The anſwer of Satan in the caſe of Job, had more of truth, wiſdome and reverence, then this; Whence commeſt thou Satan? and he ſaid, from compaſſing of the earth. For though an enemy of God, and hater of all truth, his wiſdome will hardly permit him to falſifie with the Almighty: for well underſtanding the omniſcience of his nature, he is not ſo ready to deceive himſelfe, as to falſifie unto him whoſe cognition is no way deludable: And therefore when in the tentation of Chriſt he played upon the falacy, and thought to deceive the Author of truth, the method of this proceeding aroſe from the uncertainty of his divinity, whereof had he remained aſſured, he had continued ſilent, nor would his diſcretion attempt ſo unſucceedable a temptation. And ſo againe at the laſt day, when our offences ſhall be drawne into accompt, the ſubtilty of that Inquiſitor ſhall not preſent unto God a bundle of calumnies or confutable accuſations, but will diſcreetly offer up unto his Omniſciencie, a ſure and undeniable liſt of our tranſgreſſions.

The fifth is another reply of Cain upon the denouncement of his curſe, My iniquity is greater then can be forgiven: For ſo is it expreſſed

ſed in ſome tranſlations. The aſſertion was not onely deſperate; but the conceit erroneous, overthrowing that glorious attribute of God his mercy, and conceiving the ſinne of murder unpardonable; which how great ſoever, is not above the repentance of man, but far below the mercies of God, and was as ſome conceive expiated, in that puniſhment he ſuffered temporally for it. There are but two examples of this errour in holy Scripture, and they both for murder, and both as it were of the ſame perſon; for Chriſt was myſtically ſlaine in Abel; and therefore Cain had ſome influence on his death, as well as Judas; but the ſinne had a different effect on Cain, from that it had on Judas, and moſt that ſince have fallen into it; for they like Judas deſire death, and not unfrequently purſue it: Cain on the contrary grew afraid thereof, and obtained a ſecurement from it. Aſſuredly if his deſpaire continued, there was puniſhment enough in life, and juſtice ſufficient in the mercy of his protection. For the life of the deſperate equals the anxieties of death, who in unceſſant inquietudes but act the life of the damned, and anticipate the deſolations of hell. Tis indeed a ſinne in man, but a puniſhment onely in the devils, who offend not God but afflict themſelves, in the appointed deſpaire of his mercies. And as to be without all hope is the affliction of the damned, ſo is it the happineſſe of the bleſſed, who having their expectations preſent, are not diſtracted with futurities. So is it alſo their felicity to have no faith, for enjoying the beatifical viſion there is nothing unto them inevident, and in the fruition of the object of faith, they have received the full evacuation of it.

The laſt ſpeech was that of Lamech, I have ſlaine a man to my wound, and a young man to my hurt: If Cain be avenged ſeven fold, truly Lamech ſeventy and ſeven fold. Now herein there ſeemes to be a very erroneous illation; from the indulgence of God unto Cain, concluding an immunity unto himſelfe, that is, a regular protection from a ſingle example, and an exemption from puniſhment in a fact that naturally deſerved it. The Error of this offendor was contrary to that of Cain, whom the Rabbins conceive that Lamech at this time killed. He deſpaired of Gods mercy in the ſame fact, where this preſumed of it, he by a decollation of all hope annihilated his mercy, this by an immoderancy thereof deſtroyed his juſtice, though the ſin were leſſe, the errour was as great; For as it is untrue that his mercy will not forgive offenders, or his benignity cooperate to their converſions, So is it alſo of no leſſe falſity to affirme his Juſtice will not exact account of ſinners, or puniſh ſuch as continue in their tranſgreſſions.

And thus may we perceive, how weakely our fathers did erre before the floud, how continually and upon common diſcourſe they fell upon errours after, it is therefore no wonder we have been erroneous ever ſince: And being now at greateſt diſtance from the beginning of

errour,

errour, are almoſt loſt in its diſſemination, whoſe wayes are boundleſſe, and confeſſe no circumſcription.

Chap. III.

Of the ſecond cauſe of Popular Errors; the erroneous diſpoſition of the people.

HAving thus declared the fallible nature of man even from his firſt production, we have beheld the generall cauſe of error, but as for popular errors, they are more neerely founded upon an erroneous inclination of the people; as being the moſt deceptible part of mankind, and ready with open armes to receive the encroachments of Error; which condition of theirs although deduceable from many grounds, yet ſhall we evidence it, but from a few, and ſuch as moſt neerely and undeniably declare their natures.

How unequall diſcerners of truth they are, and openly expoſed unto errour, will firſt appeare from their unqualified intellectuals, unable to umpire the difficulty of its diſſentions. For Error to ſpeake ſtrictly, is a firme aſſent unto falſity. Now whether the object whereunto they deliver up their aſſent be true or falſe, they are incompetent judges.

For the aſſured truth of things is derived from the principles of knowledge, and cauſes, which determine their verities; whereof their uncultivated underſtandings, ſcarce holding any theory, they are but bad diſcerners of verity, and in the numerous tract of error, but caſually do hit the point and unity of truth.

Their underſtanding is ſo feeble in the diſcernement of falſities, and averting the errors of reaſon, that it ſubmitteth unto the fallacies of ſence, and is unable to rectifie the error of its ſenſations. Thus the greater part of mankinde having but one eye of ſence and reaſon, conceive the earth farre bigger then the Sun, the fixed Stars leſſer then the Moone, their figures plaine, and their ſpaces equidiſtant. For thus their ſence enformeth them, and herein their reaſon cannot rectifie them, and therefore hopeleſly continuing in their miſtakes, they live and dye in their abſurdities; paſſing their dayes in perverted apprehenſions, and conceptions of the world, derogatory unto God, and the wiſdome of his creation.

Againe, being ſo illiterate in point of intellect, and their ſence ſo incorrected, they are farther indiſpoſed ever to attaine unto truth, as commonly proceeding in thoſe wayes, which have moſt reference unto ſence, and wherein there lyeth moſt notable and popular deluſion: For being unable to weild the intellectuall armes of reaſon, they are faine to betake themſelves unto waſters and the blunter weapons of truth; affecting the groſſe and ſenſible wayes of doctrine, and ſuch as will not conſiſt with ſtrict and ſubtile reaſon. Thus unto them a piece

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of Rhetorick is a sufficient argument of Logick, an Apologue of Æsope, beyond a Syllogisme in Barbara; parables then propositions, and proverbs more powerfull, then demonstrations. And therefore are they led rather by example, then precept, receiving perswasions from visible inducements, before intellectual instructions; and therefore also do they judge of humane actions by the event; for being uncapable of operable circumstances, or rightly to judge the prudenciality of affairs, they onely gaze upon the visible successe, and thereafter condemn or cry up the whole progression. And so from this ground in the Lecture of holy Scripture, their apprehensions, are commonly confined unto the literall sence of the text, from whence have ensued the grosse and duller sort of heresies. For not attaining the deuteroscopy, and second intention of the words, they are faine to omit their superconsequencies, coherencies, figures, or tropologies and are not sometime perswaded by fire beyond their literalities. And therefore also things invisible, but unto intellectuall discernments, to humor the grossenesse of their comprehensions, have been degraded from their proper forms, and God himselfe dishonoured into manuall expressions; and so likewise being unprovided, or unsufficient for higher speculations, they will alwayes betake themselves, unto sensible representations, and can hardly be restrained the dulnes of Idolatry. A sinne or folly not only derogatory unto God, but man, overthrowing their reason, as well as his divinitie. In briefe a reciprocation, or rather an Inversion of the creation, making God one way, as he made us another; that is, after our Image, as he made us after his owne.

Moreover, their understanding thus weake in it selfe, and perverted by sensible delusions, is yet farther impaired by the dominion of their appetite, that is, the irrationall and brutall part of the soule, which lording it over the soveraigne facultie, interrupts the actions of that noble part, and choakes those tender sparkes, which Adam hath left them of reason: and therefore they doe not onely swarm with errours, but vices depending thereon. Thus they commonly affect no man any farther then hee deserts his reason, or complies with their aberrancies. Hence they embrace not vertue for it selfe, but its reward, and the argument from pleasure or utilitie is farre more powerfull, then that from vertuous honesty: which Mahomet and his contrivers wel understood, when hee set out the felicitie of his heaven, by the contentments of flesh, and the delights of sense: slightly passing over the accomplishment of the soule, and the beatitude of that part which earth and visibilities too weakly affect. But the wisdom of our Saviour, and the simplicity of his truth proceeded another way, defying the popular provisions of happinesse from sensible expectations, placing his felicitie in things removed from sense, and the intellectuall enjoyment of God. And therefore the doctrine of the one was never afraid of Universities,

or endeavoured the baniſhment of learning like the other. And though Galen doth ſometime nibble at Moſes, and beſide the Apoſtate Chriſtian, ſome Heathens have queſtioned his Philoſophicall part or treatie of the Creation. Yet is there ſurely no reaſonable Pagan, that will not admire the rationall and well grounded precepts of Chriſt; whoſe life as it was conformable unto his doctrine, ſo was that unto the higheſt rules of reaſon; and muſt therefore flouriſh in the advancement of learning, and the perfection of parts beſt able to comprehend it.

Againe, their individuall imperfections being great, they are moreover enlarged by their aggregation, and being erroneous in their ſingle numbers once hudled together, they will be errour it ſelfe; for being a confuſion of knaves and fooles, and a farraginous concurrence of all conditions, tempers, ſex, and ages, it is but naturall if their determinations be monſtrous, and many wayes inconſiſtent with truth. And therefore wiſe men have alwayes applauded their owne judgement, in the contradiction of that of the people, and their ſobereſt adverſaries, have ever afforded them the ſtile of fooles and mad men; and to ſpeak impartially, their actions have often made good theſe Epithites. Had Oreſtes been Judge, he would not have acquitted that Lyſtrian rabble of madneſſe, who upon a viſible miracle, falling into ſo high a conceit of Paul and Barnabas, that they termed the one Jupiter, the other Mercurius, that they brought oxen and garlands, and were hardly reſtrained, from ſacrificing unto them, did notwithſtanding ſuddenly after fall upon Paul, and having ſtoned him, drew him for dead out of the citie. It might have hazarded the ſides of Democritus, had hee been preſent at that tumult of Demetrius, when the people flocking together in great numbers, ſome cryed one thing, and ſome another, and the aſſembly was confuſed, and the moſt part knew not wherfore they were come together; notwithſtanding, all with one voice for the ſpace of two houres cryed out, Great is Diana of the Epheſians. It had overcome the patience of Job, as it did the meekneſſe of Moſes, and would ſurely have maſtered any, but the longanimity and great ſufferance of God, Had they beheld the mutiny in the wilderneſſe, when after tenne great miracles in Egypt, and ſome in the ſame place, they melted down their ſtolen ear-rings into a calf, and monſtrouſly cryed out, Theſe are thy gods O Iſrael! that brought thee out of the land of Egypt. It much accuſeth the impatiencie of Peter, who could not endure the ſtaves of the multitude, and is the greateſt example of lenitie in our Saviour, when he deſired of God forgivenes unto thoſe, who having one day brought him into the Citie in triumph, did preſently after, act all diſhonour upon him, and nothing could be heard but *Crucifige* in their courts. Certainely hee that conſidereth theſe things in Gods peculiar people, will eaſily diſcerne how little of truth, there is in the wayes of

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the multitude; and though ſomtimes they are flattered with that Aphoriſme, will hardly beleeve the voyce of the people to bee the voyce of God.

Laſtly, being thus divided from truth in themſelves, they are yet farther removed by advenient deception. For true it is, (and I hope ſhall not offend their vulgarities) if I ſay they are daily mocked into errour by ſubtler deviſors, and have been expreſly deluded, by all profeſſions whatſoever. Thus the Prieſts of Elder time, have put upon them many incredible conceits, not onely deluding their apprehenſions, with Ariolation, South-ſaying, and ſuch oblique Idolatries, but winning their credulities unto the literall and downe-right adorement of Cats, Lizards, and Beetles; and thus alſo in ſome Chriſtian Churches, wherein is preſumed an irreproveable truth. If all be true that is ſuſpected, or halfe what is related, there have not wanted, many ſtrange deceptions, and ſome thereof are ſtill confeſſed by the name of Pious fraudes. Thus Theudas an Impoſture was able to lead away foure thouſand into the wilderneſſe, and the deluſions of Mahomet almoſt the fourth part of mankinde. Thus all hereſies how groſſe ſoever, have found a welcome with the people. For thus, what is ſcarce imaginable, many of the Jews were wrought into beliefe, that Herod was the Meſſias, and David George of Leyden and Arden, were not without a partie amongſt the people, who maintained the ſame opinion of themſelves almoſt in our dayes. Phyſitions (many at leaſt that make profeſſion thereof) beſide divers leſſe diſcoverable wayes of fraude, have made them beleeve, there is the book of fate, or the power of Aarons breſt-plate in Urines. And therefore hereunto they have recourſe as unto the Oracle of life, the great determinator of virginity, conception, fertilitie, and the inſcrutable infirmities of the whole body. For as though there were a feminalitie in Urine, or that like the ſeed that carried with it the Idea of every part, they fooliſhly conceive wee viſibly behold therein the Anatomie of every particle, and can thereby indigitate their affections.

Saltimbancoes, Quackſalvers, and Charlatans, deceive them in lower degrees; were Æſop alive the Piazza and Ponte Neufe could not but ſpeake their fallacies, meane while there are too many, whoſe cryes cannot conceale their miſchiefes: for their Impoſtures are full of crueltie, and worſe then any other, deluding not onely unto pecuniary defraudations, but the irreparable deceit of death.

Aſtrologers, which pretend to be of Caballa with the ſtarres, ſuch I meane as abuſe that worthy enquirie, have not been wanting in their deceptions, who having wonne their beliefe unto principles whereof they make great doubt themſelves, have made them beleeve that arbitrary events below, have neceſſary cauſes above; whereupon their credulities aſſent unto any prognoſticks, and daily ſwallow the predicti-

ons of men, which beſides the independency of their cauſes, and contingency in their events, are onely in the preſcience of God.

Fortune tellers, Juglers, Geomancers, and the like incantatory impoſtors, though commonly men of inferiour ranke, and from whom without infuſion they can expect no more then from themſelves, doe daily and profeſſedly delude them: unto whom (what is deplorable in men and Chriſtians) too many applying themſelves, betwixt jeſt and earneſt, betray the cauſe of truth, and incenſibly make up, the legionarie body of errour.

Statiſtes and Politicians, unto whom *Ragione di Stato*, is the firſt conſiderable, as though it were their buſineſſe to deceive the people, as a Maxime, do hold, that truth is to be concealed from them, unto whom although they reveale the vifible deſigne, yet doe they commonly conceale the capitall intention; and therefore have they alway beene the inſtruments of great deſignes, yet ſeldome underſtood the true intention of any, accompliſhing the drifts of wiſer heads as inanimate and ignorant Agents, the generall deſigne of the world; who though in ſome latitude of ſence, and in a naturall cognition performe their proper actions, yet do they unknowingly concurre unto higher ends, and blindely advance the great intention of nature. Now how farre they may bee kept in ignorance, a great example there is in the people of Rome, who never knew, the true and proper name of their owne City. For beſide that common appellation received by the Citizens, it had a proper and ſecret name concealed from them: *Cujus alterum nomen dicere ſecretis Ceremoniarum nefas habetur*, ſaith Plinie. The reaſon hereof was ſuperſtitious, leſt the name thereof being diſcovered unto their enemies, their Penates and Patronall gods, might be called forth by charms and incantations. For according unto the tradition of Magitians, the tutelary ſpirits wil not remove at common appellations, but at the proper names of things whereunto they are protectors.

Thus having beene deceived by themſelves, and continually deluded by others, they muſt needs be ſtuffed with errors, and even overrunne with theſe inferiour falſities, whereunto whoſoever ſhall reſigne their reaſons, either from the root of deceit in themſelves, or inabilitie to reſiſt ſuch triviall ingannations from others, although their condition and fortunes may place them many Spheres above the multitude, yet are they ſtill within the line of vulgaritie, and the Democraticall enemies of truth.

CHAP.

Chap. IIII.

Of the nearer and more Immediate Causes of popular errours, both in the Wiser, and common sort, Misapprehension, Fallacy, or false diduction, Credulity, Supinity, adherence unto Antiquitie, Tradition, and Authoritie.

THe first is a mistake, or a conception of things, either in their first apprehensions, or secondary relations. So Eve mistook the Commandement, either from the immediate injunction of God, or from the secondary narration of her husband. So might the Disciples mistake our Saviour, in his answer unto Peter, concerning the death of John, as is delivered, John 21. Peter seeing John, saith unto Jesus, Lord, and what shall this man doe? Jesus saith, If I will, that he tarry till I come, what is that unto thee? Then went this saying abroad among the brethren, that that Disciple should not die. Thus began the conceit and opinion of the Centaures, that is in the mistake of the first beholders, as is declared by Servius, when some young Thessalians on horseback were beheld a farre off, while their horses watered, that is, while their heads were depressed, they were conceived by their first spectators, to be but one animall, and answerable hereunto have their pictures been drawn ever since.

And as simple mistakes commonly beget fallacies, so men rest not in false apprehensions, without absurd and inconsequent diductions, from fallacious foundations, and misapprehended mediums, erecting conclusions no way inferrible from their premises. Now the fallacies whereby men deceive others, and are deceived themselves, the Ancients, have divided into Verball and Reall. Of the Verball, and such as conclude from mistakes of the word, although there be no lesse then sixe, yet are there but two onely thereof worthy our notation: and unto which the rest may be referred: that is the fallacie of Æquivocation and Amphibologie, which conclude from the ambiguity of some one word, or the ambiguous sintaxis of many put together. From this fallacy arose that calamitous error of the Jewes, misapprehending the Propheſies of their Messias, and expounding them alwayes unto literall and temporall expectation. By this way many errors crept in and perverted the doctrine of Pythagoras; whilest men received his precepts in a different sense from his intention, converting Metaphors into proprieties, and receiving as litterall expressions, obscure and involved truths. Thus when he enjoyned his Disciples, an abstinence from beanes, many conceived they were with severity debarred the use of that pulse; which notwithstanding could not be his meaning for as Aristoxenus who wrote his life, averreth he delighted much in that kind of food himselfe; but herein as Plutarch observeth, he had no other intention, then to disswade men from Magistracie, or undertaking the publike offices of state; for by beanes were the Magistrates elected

lected in some parts of Greece; and after his dayes, wee read in Thucydides, of the Councell of the beane in Athens. The same word also in Greeke doth signifie a testicle, and hath been thought by some an injunction only of continencie, as Aul. Gellius hath expounded, and as Empedocles may also be interpreted, παν δειλοι καμων απο κειρες εχεσθε, that is, *Testiculis miseri dextras subducite.* Againe his injunction is, not to harbour Swallowes in our houses: Whose advice notwithstanding we doe not contemne, who daily admit and cherish them; for herein a caution is only implied not to entertain ungratefull and thankelesse persons, which like the swallow are no way commodious unto us, but having made use of our habitations, and served their owne turnes, forsake us. So he commands to deface the print of a cauldron in the ashes, after it hath boyled. Which strictly to observe were most condemnable superstition: For hereby he covertly adviseth us not to persevere in anger, but after our choler hath boyled, to retaine no impression thereof. In the like sense are to be received, or they will else be misapprehended, when he adviseth his Disciples to give the right hand but to few, to put no viands in a chamberpot, not to passe over a ballance, not to rake up fire with a sword, or pisse against the Sunne, which enigmatical deliveries comprehended usefull verities, but being mistaken by literall Expositors at the first, they have been understood by most since, and may bee occasion of error to verball capacities for ever.

This fallacy in the first delusion Satan did put upon Eve, and his whole tentation might be this Elench continued; so when he said, Yee shall not dye, that was in his equivocation, she shall not incurre a present death, or a destruction immediatly ensuing your transgression. Your eyes shall be opened, that is, not to the enlargement of your knowledge, but to the discovery of your shame and proper confusion. You shall know good and evill, that is you shall have knowledge of good by its privation, but cognisance of evill by sense and visible experience. And the same fallacy or way of deceit so well succeeding in Paradise, hee continued in his Oracles through all the world. Which had not men more warily understod, they might have performed many acts inconsistent with his intention: Brutus might have made haste with Tarquine to have kissed his owne mother. The Athenians might have built them wooden walls, or doubled the Altar at Delphos.

The circle of this fallacie is very large, and herein may be comprised all Ironicall mistakes; for intended expressions receiving inverted significations, all deductions from metaphors, parables, allegories, unto reall and rigid interpretations. Whereby have arisen not only popular errors in Philosophy, but vulgar and senseleese heresies in Divinity, as will be evident unto any that shall examine their foundations, as they stand related by Epiphanius, Austin, or Prateolus.

Other

Other wayes there are of deceit which consist not, in false apprehension of words, that is verball expressions or sententiall significations, but fraudulent deductions, or inconsequent illations, from a false conception of things. Of these extradictionary and reall fallacies, Aristotle and Logicians make in number six, but we observe that men are most commonly deceived by foure thereof: those are, *Petitio principii.* A *dicto secundum quid ad dictum simpliciter.* A *non causa pro causa.* And *fallacia consequentis.*

The first is *petitio principii*, which fallacie is committed, when a question is made a medium, or we assume a medium as granted, whereof we remaine as unsatisfied as of the question. Briefly where that is assumed as a principle, to prove another thing which is not conceaded as true it selfe. By this fallacie was Eve deceived, when shee took for granted, the false assertion of the devill; Yee shall not surely dye, for God doth know that in the day she shall eat thereof, your eyes shall be opened, and you shall be as gods; which was but a bare affirmation of Satan without any proofe or probable inducement, contrary unto the command of God and former beliefe of herselfe; and this was the Logick of the Jews, when they accused our Saviour unto Pilate, who demanding a reasonable impeachment, or the allegation of some crime worthy of condemnation, they only replyed, if he had not been worthy of death, we would not have brought him before thee; wherein there was neither accusation of the person, nor satisfaction of the Judge, who well understood a bare accusation was no presumption of guilt, and the clamors of the people no accusation at all. The same fallacy is sometime used in the dispute, between Job, and his friends, they often taking that for granted which afterward he denyeth and disproveth.

The second is *à dicto secundum quid ad dictum simpliciter*, when from that which is but true in a qualified sense an inconditionall and absolute verity is inferred, transferring the speciall consideration of things unto their generall acceptions, or concluding from their strict acception, unto that without all limitation. This falacie men commit when they argue from a particular to a generall, as when we conclude the vices or qualities of a few upon a whole Nation, or from a part unto the whole. Thus the divell argued with our Saviour, and by this he would perswade him he might be secure if hee cast himselfe from the pinacle: for said he, it is written, he shall give his Angels charge concerning thee, and in their hands they shall beare thee up, lest at any time thou dash thy foot against a stone. But this illation was fallacious leaving out part of the text, Psalme 91. He shall keep thee in all thy wayes; that is, in the wayes of righteousnesse, and not of rash attempts: so he urged a part for the whole, and inferred more in the conclusion, then was contained in the premises. By this same fallacie we proceed, when we conclude from the signe unto the thing signified. By this

in-

incroachment Idolatry first crept in, men converting the symbolicall use of Idols into their proper worship, and receiving the representation of things as the substance and thing it selfe. So the statue of Belus at first erected in his memory, was in after times adored as a Divinity. And so also in the Sacrament of the Eucharist, the bread and wine which were but the signalls or visible signes, were made the things signified, and worshipped for the body of Christ. And hereby generally men are deceived that take things spoken in some latitude without any at all. Hereby the Jewes were deceived concerning the commandement of the Sabbath, accusing our Saviour for healing the sicke, and his disciples for plucking the ears of corne, upon that day. And by this deplorable mistake they were deceived unto destruction, upon the assault of Pompey the great made upon that day, by whose superstitious observation they could not defend themselves, or performe any labour whatsoever.

The third is a *non causâ pro causâ*, when that is pretended for a cause which is not, or not in that sense which is inferred. Upon this consequence the law of Mahomet forbids the use of wine, and his successors abolished Universities: by this also many Christians have condemned literature, misunderstanding the counsell of Saint Paul, who adviseth no further then to beware of Philosophy. On this foundation were built the conclusions of Southsayers in their Augurial, and Tripudiary divinations, collecting presages from voice or food of birds, and conjoyning events unto causes of no connexion. Hereupon also are grounded the grosse mistakes, in the cure of many diseases, not only from the last medicine, and sympatheticall receits, but amulets charms, and all incantatory applications, deriving effects not only from inconcurring causes, but things devoid of all efficiencie whatever.

The fourth is the fallacie of the consequent, which if strictly taken, may be a fallacious illation in reference unto antecedencie, or consequencie; as to conclude from the position of the antecedent, unto the position of the consequent, or from the remotion of the consequent to the remotion of the antecedent. This is usually committed, when in connexed propositions the termes adhere contingently. This is frequent in Oratorie illations, and thus the Pharisees, because he conversed with Publicans and sinners, accused the holinesse of Christ. But if this fallacy be largely taken, it is committed in any vitious illation, offending the rules of good consequence, and so it may be very large, and comprehend all false illations against the setled laws of Logick; but the most usuall consequences are from particulars, from negatives, and from affirmative conclusions in the second figure, wherein indeed offences are most frequent, and their discoveries not difficult.

CHAP.

Chap. V.

Of Credulity and Supinity.

A Third cauſe of common Errors is the Credulity of men, that is an eaſie aſſent, to what is obtruded, or a believing at firſt eare what is delivered by others; this is a weakneſſe in the underſtanding, without examination aſſenting unto things, which from their natures and cauſes doe carry no perſwaſion; whereby men often ſwallow falſities for truths, dubioſities for certainties, feſibilities for poſſibilities, and things impoſſible as poſſibilities themſelves. Which though a weakneſſe of the Intellect, and moſt diſcoverable in vulgar heads, yet hath it ſometime fallen upon wiſer braines, and great advancers of truth. Thus many wiſe Athenians ſo far forgot their Philoſophy, and the nature of humane production, that they deſcended unto beliefes, the originall of their Nation was from the Earth, and had no other beginning then from the ſeminality and wombe of their great Mother. Thus is it not without wonder, how thoſe learned Arabicks ſo tamely delivered up their beliefe unto the abſurdities of the Alcoran. How the noble Geber, Avicenna and Almanzor, ſhould reſt ſatisfied in the nature and cauſes of earthquakes, delivered from the doctrine of their Prophet; that is, from the motion of a great Bull, upon whoſe hornes all the earth is poiſed. How their faiths could decline ſo low, as to concede their generations in heaven, to be made by the ſmell of a citron, or that the felicity of their Paradiſe ſhould conſiſt in a Jubile of conjunction, that is a coition of one act prolonged unto fifty years. Thus is it almoſt beyond wonder, how the beliefe of reaſonable creatures, ſhould ever ſubmit unto Idolatry: and the credulity of thoſe men ſcarce credible, without preſumption of a ſecond fall, who could believe a Deity in the worke of their owne hands. For although in that ancient and diffuſed adoration of Idolls, unto the Prieſts and ſubtiler heads, the worſhip perhaps might be ſymbolicall, and as thoſe Images ſome way related unto their deities, yet was the Idolatry direct and downe-right in the people, whoſe credulity is illimitable, who may be made believe that any thing is God, and may be made believe there is no God at all.

And as Credulity is the cauſe of Error, ſo incredulity oftentimes of not enjoying truth, and that not only an obſtinate incredulity, whereby wee will not acknowledge aſſent unto what is reaſonably inferred, but any Academicall reſervation in matters of eaſie truth, or rather ſceptical infidelity againſt the evidence of reaſon and ſenſe. For theſe are conceptions befalling wiſe men, as abſurd as the apprehenſions of fooles, and the credulity of the people which promiſcuouſly ſwallow any thing. For this is not only derogatory unto the wiſdome of God,

who hath proposed the world unto our knowledge, and thereby the notion of himselfe, but also detractory unto the intellect, and sense of man expressedly disposed for that inquisition. And therefore *hoc tantum scio quod nihil scio*, is not to be received in an absolute sense, but is comparatively expressed unto the number of things whereof our knowledge is ignorant; nor will it acquit the insatisfaction of those which quarrell with all things, or dispute of matters concerning whose verities we have conviction from reason, or decision from the inerrable and requisite conditions of sense. And therefore if any man shall affirme the earth doth move, and will not believe with us, it standeth still, because he hath probable reasons for it, and I no infallible sense nor reason against it, I will not quarrell with his assertion: but if like Zeno he shall walke about, and yet deny there is any motion in nature, surely it had been happy he had been born in Antycera, and is only fit to converse with their melancholies, who having a conceit that they are dead, cannot be convicted into the society of the living.

The fourth is a supinity or neglect of enquiry, even in matters whereof we doubt, rather beleeving, as we say, then going to see, or doubting with ease and gratis, then beleeving with difficulty or purchase; whereby either by a temperamentall inactivity we are unready to put in execution the suggestions or dictates of reason, or by a content and acquiescence in every species of truth we embrace the shadow thereof, or so much as may palliate its just and substantiall acquirements. Had our forefathers sat downe in these resolutions, or had their curiosities been sedentary, who pursued the knowledge of things through all the corners of nature, the face of truth had been obscure unto us, whose lustre in some part their industries have revealed.

Certainly the sweat of their labours was not salt unto them, and they took delight in the dust of their endeavours. For questionlesse in knowledge there is no slender difficulty, and truth which wise men say doth lye in a well, is not recoverable but by exantlation. It were some extenuation of the curse, if *in sudore vultus tui*, were confineable unto corporall exercitations, and there still remained a Paradise or unthorny place of knowledge; but now our understandings being eclipsed, as well as our tempers infirmed, we must betake our selves to wayes of reparation, and depend upon the illumination of our endeavours; for thus we may in some measure repaire our primarie ruins, and build our selves men againe. And though the attempts of some have been precipitous, and their enquiries so audacious as to come within command of the flaming swords, and lost themselves in attempts above humanity, yet have the inquiries of most defected by the way, and tyred within the sober circumference of knowledge.

And this is the reason why some have transcribed any thing, and although they cannot but doubt thereof, yet neither make experiment by

by sence or enquiry by reason, but live in doubts of things whose satisfaction is in their owne power, which is indeed the inexcusable part of our ignorance, and may perhaps fill up the charge of the last day. For not obeying the dictates of reason, and neglecting the cryes of truth, we faile not onely in the trust of our undertakings, but in the intention of man it selfe; which although more veniall unto ordinary constitutions, and such as are not framed beyond the capacity of beaten notions, yet will it inexcusably condemne some men, who having received excellent endowments, and such as will accuse the omissions of perfection, have yet sat downe by the way, and frustrated the intention of their habilities. For certainely as some men have sinned, in the principles of humanity, and must answer, for not being men, so others offend if they be not more; *Magis extra vitia quam cum virtutibus*, would commend those, These are not excusable without an Excellency. For great constitutions, and such as are constellated unto knowledge, do nothing till they outdoe all; they come short of themselves if they go not beyond others, and must not sit downe under the degree of worthies. God expects no lustre from the minor stars, but if the Sun should not illuminate all, it were a sin in Nature. *Vltimus bonorum*, will not excuse every man, nor is it sufficient for all to hold the common levell; Mens names should not onely distinguish them: A man should be something that men are not, and individuall in somewhat beside his proper nature. Thus while it exceeds not the bounds of reason, and modesty, we cannot condemne singularity. *Nos numerus sumus*, is the motto of the multitude, and for that reason are they fooles. For things as they recede from unity, the more they approach to imperfection, and deformity; for they hold their perfection in their simplicities, and as they neerest approach unto God.

Now as there are many great wits to be condemned, who have neglected the increment of Arts, and the sedulous pursuit of knowledge, so are there not a few very much to be pittied, whose industry being not attended with naturall parts, they have sweat to little purpose, and roled the stone in vain: which chiefly proceedeth from naturall incapacity, and geniall indisposition, at least to those particular wayes whereunto they apply their endeavours. And this is one reason why though Universities bee full of men, they are oftentimes empty of learning. Why as there are some which do much without learning, so others but little with it, and few that attaine to any perfection in it. For many heads that undertake it, were never squared nor timbred for it. There are not onely particular men, but whole nations indisposed for learning, whereunto is required not onely education, but a pregnant Minerva and teeming constitution. For the wisdome of God hath divided the Genius of men according to the different affaires of the world, and varied their inclinations according to the variety of Acti-

ons to be performed therein, which they who consider not, rudely rushing upon professions and wayes of life unequall to their natures; dishonour not onely themselves and their functions, but pervert the harmony of the whole world. For if the world went on as God hath ordained it, and were every one implyed in points concordant to their Natures; Professions, Arts and Common-wealths would rise up of themselves; nor needed we a Lanthorne to finde a man in Athens.

Chap. VI.

Of adherence unto Antiquity.

But the mortallest enemy unto knowledge, and that which hath done the greatest execution upon truth, hath beene a peremptory adhesion unto Authority, and more especially the establishing of our beliefe upon the dictates of Antiquities. For (as every capacity may observe) most men of Ages present, so superstitiously do look on Ages past, that the authorities of the one, exceed the reasons of the other. Whose persons indeed being farre removed from our times, their works which seldome with us passe uncontrouled, either by contemporaries or immediate successors, are now become out of the distance of envies. And the farther removed from present times, are conceived to approach the neerer unto truth it selfe. Now hereby me thinks wee manifestly delude our selves, and widely walke out of the tracke of truth.

For first, men hereby impose a thraldome on their times, which the ingenuity of no age should endure, or indeed the presumption of any did ever yet enjoyne. Thus Hippocrates about 2000. yeare agoe, conceived it no injustice, either to examine or refute the doctrines of his predecessors: Galen the like, and Aristotle most of any; yet did not any of these conceive themselves infallible, or set downe their dictates as verities irrefragable; but when they either deliver their owne inventions, or rejected other mens opinions, they proceed with Judgement and Ingenuity, establishing their assertion, not onely with great solidity, but submitting them also unto the correction of future discovery.

Secondly, men that adore times past, consider not that those times were once present, that is, as our owne are at this instant, and wee our selves unto those to come, as they unto us at present; as wee rely on them, even so will those on us, and magnifie us hereafter, who at present condemne our selves; which very absurdity is dayly committed amongst us even in the esteeme and censure of our owne times. And to speake impartially, old men from whom wee should expect the greatest example of wisdome, do most exceede in this point of folly; commending the dayes of their youth, they scarce remember; at least well

well understood not; extolling those times their younger yeares have heard their fathers condemne, and condemning those times the gray heads of their posterity shall commend. And thus is it the humour of many heads to extoll the dayes of their fore-fathers, and declaime against the wickednesse of times present; which notwithstanding they cannot handsomely doe, without the borrowed helpe and satyres of times past, condemning the vices of their times, by the expressions of vices in times which they commend, which cannot but argue the community of vice in both; Horace therefore, Juvenall and Perseus were no prophets, although their lives did seeme to indigitate and point at our times. There is a certaine list of vices committed in all ages, and declaimed against by all Authors, which will last as long as humane nature, or digested into common places may serve for any theme, and never be out of date untill Doomes day. Thirdly, the testimonies of Antiquity and such as passe oraculously amongst us, were not if wee consider them alwayes so exact, as to examine the doctrine they delivered. For some, and those the acutest of them, have left unto us many things of falsitie, controulable, not onely by criticall and collective reason, but common and countrey observation. Hereof there want not many examples in Aristotle, through all his booke of animals; we shall instance onely in three of his Problemes, and all contained under one Section. The first enquireth why a Man doth cough, but not an Oxe or Cow? whereas notwithstanding the contrary is often observed by husbandmen, and stands confirmed by those who have expresly treated *de re Rustica*, and have also delivered diverse remedies for it. Why Juments (ὑποζύγια he termes them) as Horses, Oxen and Asses, have no eructation or belching, whereas indeed the contrary is often observed, and also delivered by Columella. And thirdly, *cur solus homo*, πολίας ἔχει, why man alone hath gray hayres? whereas it cannot escape the eyes, and ordinary observation of all men, that horses, dogs, and foxes, wax gray with age in our Countries, and in colder regions many other animals without it.

Other Authors write often dubiously, even in matters wherein is expected a strict and definitive truth, extenuating their affirmations, with *aiunt*, *ferunt*, *fortasse*, As Dioscorides, Galen, Aristotle, and many more. Others by heare say, taking upon trust most they have delivered, whose volumes are meer collections, drawne from the mouthes or leaves of other Authours; as may bee observed in Plinie, Ælian, Athenæus, and many others. Not a few transcriptively, subscribing their names unto other mens endeavours, and meerely transcribing almost all they have written. The Latines transcribing the Greekes, the Greekes and Latines each other. Thus hath Justine borrowed all from Trogus Pompeius, and Julius Solinus in a manner transcribed Plinie, thus have Lucian and Apuleius served Lucius Patensis, men

both

both living in the ſame time, and both tranſcribing the ſame Authour, in thoſe famous Bookes, Entituled Lucius by the one, and Aureus Aſinus by the other. In the ſame meaſure hath Simocrates in his Tract *de Nilo*, dealt with Diodorus Siculus, as may be obſerved, in that worke annexed unto Herodotus, and tranſlated by Jungermannus. Thus Eratoſthenes wholy tranſlated Timotheus *de Inſulis*, not reſerving the very Preface. The very ſame doth Strabo report of Edorus and Ariſton in a Treatiſe entituled *de Milo*. Clemens Alexandrinus hath alſo obſerved many examples hereof among the Greekes, and Plinie ſpeaketh very plainely in his Preface, that conferring his Authors, and comparing their workes together, hee generally found thoſe that went before *verbatim* tranſcribed, by thoſe that followed after, and their originalls never ſo much as mentioned. Even the magnified Virgil hath borrowed almoſt all his works: his Eclogues from Theocritus, his Georgicks from Heſiod and Aratus, his Æneads from Homer, the ſecond Booke thereof containing the exploit of Sinon and the Trojan horſes, (as Macrobius obſerveth) he hath *verbatim* derived from Piſander. Our own profeſſion is not excuſable herein. Thus Oribaſius, Ætius and Ægineta have in a manner tranſcribed Galen. But Marcellus Empericus who hath left a famous worke *de medicamentis*, hath word for word, tranſcribed all Scriboneus Largus, *de compoſitione medicamentorum*, and not left out his very peroration. And thus may we perceive the Ancients were but men, even like our ſelves. The practiſe of tranſcription in our dayes was no monſter in theirs: Plagiarie had not its nativitie with printing, but began in times when thefts were difficult, and the paucity of bookes ſcarce wanted that invention.

Fourthly, while we ſo eargerly adhear unto Antiquity, and the accounts of elder times, we are to conſider the fabulous condition thereof; and that wee ſhall not deny if wee call to minde the mendacity of Greece, from whom we have received moſt relations, and that a conſiderable part of Ancient times, was by the Greeks themſelves termed μύθικον, that is made up or ſtuffed out with fables, and ſurely the fabulous inclination of thoſe dayes, was greater then any ſince, which ſwarmed ſo with fables, and from ſuch ſlender grounds, tooke hyntes for fictions, poyſoning the world ever after; wherein how far they exceeded, may be exemplified from Palæphatus, in his book of fabulous narrations. That fable of Orpheus, who by the melody of his muſick, made woods and trees to follow him, was raiſed upon a ſlender foundation; for there were a crew of mad women, retyred unto a mountain, from whence being pacifyed by his Muſicke, they deſcended with boughs in their hands, which unto the fabuloſitie of thoſe times, proved a ſufficient ground to celebrate unto all poſteritie the Magick of Orpheus harpe, and its power to attract the ſenſeleſſe trees about it. That Medea the famous Sorcereſſe could renue youth, and make old

old men young againe, was nothing else but that from the knowledge of simples shee had a receipt to make white haire black, and reduce old heads into the tincture of youth againe. The fable of Gerion and Cerberus with three heads was this: Gerion was of the City Tricarinia that is of three heads, and Cerberus of the same place was one of his dogs, which running into a cave upon pursuit of his masters oxen, Hercules perforce drew him out of that place, from whence the conceits of those dayes affirmed no lesse, then that Hercules descended into hell, and brought up Cerberus into the habitation of the Living. Upon the like grounds was raised the figment of Briareus, who dwelling in a city called Hecatonchiria, the fancies of those times assigned him an hundred hands. Twas ground enough to fancy wings unto Dædalus, in that he stole out of a window from Minos, and sailed away with his son Icarus, who steering his course wisely, escaped, but his son carrying too high a saile was drowned. That Niobe weeping over her children was turned into a stone, was nothing else but that during her life, she erected over their sepultures, a marble tombe of her owne. When Acteon had undone himselfe with dogs, and the prodigall attendance of hunting, they made a solemne story how he was devoured by his hounds. And upon the like grounds was raised the Anthropophagie of Diomedes his horses. Upon as slender foundation was built, the fable of the Minotaure; for one Taurus a servant of Minos begat his mistresse Pasiphae with childe, from whence the infant was named Minotaurus. Now this unto the fabulositie of those times was thought sufficient to accuse Pasiphae of Beastialitie, or admitting conjunction with a Bull, and in succeeding ages gave a hynte of depravity unto Domitian to act the fable into Realitie.

Fiftly, we applaude many things delivered by the Ancients, which are in themselves but ordinarie, and come short of our own conceptions. Thus we usually extoll, and our Orations cannot escape the sayings of the wisemen of Greece. *Nosce teipsum* of Thales: *Nosce tempus* of Pittacus: *Nihil nimis* of Cleobulus; which notwithstanding to speake indifferently, are but vulgar precepts in Morality, carrying with them nothing above the lyne, or beyond the extemporall sententiosity of common conceits with us. Thus we magnifie the Apothegmes, or reputed replyes of wisdome, whereof many are to be seen in Laertius, more in Lycosthenes, not a few in the second booke of Macrobius, in the salts of Cicero Augustus, and the Comicall wits of those times: in most whereof there is not much of admiration, and are me thinkes exceeded, not only in the replyes of wise men, but the passages of societie and daily urbanities of our times. And thus we extoll their adages or proverbs, and Erasmus hath taken great pains to make collections of them, whereof notwithstanding the greater part will, I beleeve, unto indifferent judges be esteemed no such rarities, and may be paralelled, if

not

not exceeded, by those of more unlearned nations, & many of our own.

Sixtly, wee urge authorities, in points that need not, and introduce the testimony of ancient writers, to confirm things evidently beleeved, and whereto no reasonble hearer but would assent without them, such as are; *Nemo mortalium omnibus horis sapit. Virtute nil præstantius, nil pulchrius; Omnia vincit amor. Præclarum quiddam veritas.* All which, although things knowne and vulgar, are frequently urged by many men, and though triviall verities in our mouthes, yet noted from Plato, Ovid, or Cicero, they receive immediate additions, and become reputed elegancies. For many hundred to instance but in one we meet with while we are writing. Antonius Guevara that elegant Spaniard, in his book intituled, *The Diall of Princes*, beginneth his Epistle thus. Apolonius Thyaneus disputing with the Schollers of Hiarchas, said, that among all the affections of nature, nothing was more naturall, then the desire all have to preserve life; which being a confessed truth, and a veritie acknowledged by all, it was a superfluous affectation, to derive its authoritie from Apolonius, or seeke a confirmation thereof as farre as India, and the learned Schollers of Hiarchus; which whether it be not al one to strengthen common dignities and principles known by themselves, with the authoritie of Mathematicians; or thinke a man should beleeve; The whole is greater then its parts, rather upon the authoritie of Euclide, then if it were propounded alone, I leave unto the second and wiser cogitations of all men. Tis sure a practise that savours much of Pedantery, a Reserve of Puerilitie wee have not shaken off from Schoole, where being seasoned with Minor sentences, by a neglect of higher enquiries, they prescribe upon our riper eares, and are never worne out but with our memories.

Lastly, while we so devoutly adhere unto Antiquity in some things, we doe not consider we have deserted them in severall other; for they indeed have not only been imperfect, in the conceit of many things, but either ignorant or erroneous in divers other. They understood not the motion of the eight spheare from West to East, and so conceived the longitude of the starres invariable. They conceived the torrid Zone unhabitable, and so made frustrate the goodliest part of the earth. But we now know 'tis very well empeopled, and the habitation thereof esteemed so happy, that some have made it the proper seat of Paradise, and beene so farre from judging it unhabitable that they have made it the first habitation of all. Many of the Ancients denyed the Antipodes, and some unto the penalty of contrary affirmations; but the experience of our enlarged navigations, can now assert them beyond all dubitation. Having thus totally relinquisht them in some things, it may not be presumptuous, to examine them in others, but surely most unreasonable to adhere to them in all, as though they were infallible or could not erre in any.

Chap. VII.

Of Authority.

NOr is only a reſolved proſtration unto Antiquity a powerfull enemy unto knowledge, but alſo a confident adherence unto any Authority, or reſignation of our judgements upon the teſtimony of any Age or Author whatſoever. For firſt, to ſpeake generally an argument from Authority to wiſer examinations, is but a weaker kinde of proofe, it being no other but a topicall probation; and as we terme it, an inartificiall argument, depending upon a naked aſſeveration: wherein neither declaring the cauſes, affections or adjuncts of what we believe. It carrieth not with it the reaſonable inducements of knowledge, and therefore *contra negantem principia*, *Ipſe dixit*, or *oportet diſcentem credere*, although they may be poſtulates, very accomodable unto Junior indoctrinations, yet are their authorities but temporary, and not to be imbraced beyond the minority of our intellectuals. For our advanced beliefs are not to be built upon dictates, but having received the probable inducements of truth, we become emancipated from teſtimoniall engagements, and are to erect upon the ſurer baſe of reaſon. Secondly, unto reaſonable perpenſions it hath no place in ſome Sciences, ſmall in others, and ſuffereth many reſtrictions, even where it is moſt admitted. It is of no validity in the Mathematicks, eſpecially the mother part thereof Arithmetick and Geometry: For theſe Sciences concluding from dignities and principles knowne by themſelves, they receive not ſatisfaction from probable reaſons, much leſſe from bare and peremptory aſſeverations. And therefore if all Athens ſhould decree, that in every triangle, two ſides which ſoever be taken are greater then the ſide remaining, or that in rectangle triangles the ſquare which is made of the ſide that ſubtendeth the right angle, is equall to the ſquares which are made of the ſides containing the right angle: Although there be a certaine truth therein, would Geometritians notwithſtanding, receive a ſatisfaction without demonſtration thereof? 'Tis true by the vulgarity of Philoſophers, there are many points beleeved without probation, and if a man affirme from Ptolomy, that the Sun is bigger then the Earth, ſhall he probably meet with any contradiction herein, whereunto notwithſtanding Aſtronomers will not aſſent without ſome convincing argument or demonſtrative proofe thereof? And therefore certainly of all men a Philoſopher, ſhould be no ſwearer: for an oath which is the end of controverſies in Law cannot determine any here, nor are the deepeſt ſacraments or deſperate imprecations of any force to perſwade where reaſon only, and neceſſary mediums muſt induce.

In naturall Philoſophy, and which is more generally purſued amongſt us, it carryeth but ſlender conſideration, for that alſo proceeding

ding from ſetled principles, therein is expected a ſatisfaction from ſcientificiall progreſſions, and ſuch as beget, a ſure and rationall beleefe. For if Authority might have made out the aſſertions of Philoſophy, wee might have held, that ſnow was blacke, that the ſea was but the ſweat of the earth, and many of the like abſurdities. Then was Ariſtotle injurious to fall upon Meliſſus, and to reject the aſſertions of Anaxagoras, Anaximander, and Empedocles, and then were we alſo ungratefull unto himſelfe, from whom our Junior endeavours embracing many things by his authority, our mature and ſecondary enquiries, are forced to quit thoſe receptions, and to adhere unto the neareſt accounts of reaſon. And although it be not unuſuall, even in Philoſophicall tractates to make enumeration of Authors, yet are there reaſons uſually introduced, and to ingenuous readers doe carry the ſtroake in the perſwaſion. And ſurely if we account it reaſonable among our ſelves, and not injurious unto rationall Authors, no farther to abet their opinions then as they are ſupported by ſolid reaſon; certainly with more excuſable reſervation may we ſhrink at their bare teſtimonies, whoſe argument is but precarious and ſubſiſts upon the charity of our aſſentments. In Morality, Rhetorick, Law and Hiſtory, there is I confeſſe a frequent and allowable uſe of teſtimony, and yet herein I perceive, it is not unlimitable, but admitteth many reſtrictions. Thus in Law both Civill and Divine, that is only eſteemed *legitimum teſtimonium*, or a legall teſtimony, which receives comprobation from the mouths of at leaſt two witneſſes; and that not onely for prevention of calumny, but aſſurance againſt miſtake, whereas notwithſtanding the ſolid reaſon of one man, is as ſufficient as the clamor of a whole Nation; and within imprejudicate apprehenſions begets as firm a beleef as the authoritie or aggregated teſtimony of many hundreds: For reaſon being the very root of our natures, and the principles thereof common unto all, what is againſt the lawes of true reaſon, or the undeceived underſtanding of any one, if rightly apprehended, muſt be diſclaimed by all Nations, and rejected even by mankinde.

Againe, a teſtimony is of ſmall validity if deduced from men out of their owne profeſſion; ſo if Lactantius affirme the figure of the earth is plaine, or Auſtin himſelfe deny there are Antipodes; though venerable Fathers of the Church, and ever to be honoured, will their authorities prove ſufficient to ground a beleefe thereon? whereas notwithſtanding the ſolid reaſon or confirmed experience of any man, is very approveable in what profeſſion ſoever. So Raymund Sebund, a Phyſitian of Tholouze, beſides his learned Dialogues, *de natura humana*, hath written a naturall Theologie, demonſtrating therein the Attributes of God, and attempting the like in moſt points of Religion. So Hugo Grocius a Civilian, did write an excellent Tract in Dutch of the verity of Chriſtian Religion, and hath ſince contracted the ſame

into

into six bookes in Latine, wherein most rationally delivering themselves, their works will be embraced by most that understand them, and their reasons enforce beliefe even from prejudicate Readers. Neither indeed have the authorities of men bin ever so awfull, but that by some they have beene rejected, even in their owne professions. Thus Aristotle affirming the birth of the Infant or time of its gestation, extenderh sometimes unto the eleventh month, but Hippocrates averring that it exceedeth not the tenth. Adrian the Emperour in a solemne processe, determined for Aristotle, but Justinian many yeares after, tooke in with Hippocrates and reversed the Decree of the other. Thus have Councels not onely condemned private men, but the Decrees and Acts of one another. So Galen after all his veneration of Hippocrates, in some things hath fallen from him. Avicen in many from Galen, and others succeeding from him: and although the singularity of Paracelsus be intollerable, who sparing onely Hippocrates, hath reviled not onely the Authors, but almost all the learning that went before him; yet is it not much lesse injurious unto knowledge obstinately and inconvincibly to side with any one: Which humour unhappily possessing many men, they have by prejudice withdrawne themselves into parties, and contemning the soveraignty of truth, seditiously abetted the private divisions of error.

Moreover a Testimony in points historicall, and where it is of unavoydable use, is of no illation in the negative, nor is it of consequence that Herodotus writing nothing of Rome, there was therefore no such city in his time; or because Dioscorides hath made no mention of Unicornes horne, there is therefore no such thing in Nature. Indeed intending an accurate enumeration of Medicall materials, the omission hereof affords some probability, it was not used by the Ancients, but will not conclude the nonexistence thereof. For so may we annihilate many simples unknowne to his enquiries, as Senna, Rhabarbe, Bezoar, Ambregris, and divers others. Whereas indeed the reason of man hath no such restraint, concluding not onely affirmatively but negatively, not onely affirming there is no magnitude beyond the last heavens, but also denying there is any vacuity within them: Although it be confessed the affirmative hath the prerogative illation, and Barbara engrosseth the powerfull demonstration.

Lastly, the strange and unimaginable relations made by Authors, may sufficiently discourage our adherence unto Authority, and which if we beleeve we must be apt to swallow any thing. Thus Basil will tell us, the Serpent went erect like man, and that that beast could speake before the fall. Tostatus would make us beleeve that Nilus encreaseth every new Moone. Leonardo Fioravanti an Italian Physitian, beside many other secrets assumeth unto himselfe the discovery of one concerning Pellitory of the wall; that is, that it never groweth in the

ſight of the North ſtar. *Doue ſi poſſa vedere la ſtella Tramontana*, wherein how wide he is from truth is eaſily diſcoverable unto every one, who hath but Aſtronomy enough to know that ſtarre. Franciſcus Sanctius in a laudable Comment of his upon Alciats Emblems, affirmeth and that from experience, a Nightingale hath no tongue. *Avem Philomelam lingua carere pro certo affirmare poſſum, niſi me oculi fallunt.* Which if any man for while ſhall beleeve upon his experience, he may at his leaſure refute it by his owne. What foole almoſt would beleeve, at leaſt, what wiſe man would rely upon that Antidote delivered by Pierius in his Hieroglyphicks againſt the ſting of a Scorpion? that is, to ſit upon an Aſſe with ones face toward his taile; for ſo the paine, from its ſting leaveth the man, and paſſeth into the beaſt. It were me thinks but an uncomfortable receite for a Quartane Ague, and yet as good perhaps as many others uſed, to have recourſe unto the remedy of Sammonicus, that is, to lay the fourth book of Homers Iliads under ones head, according to the precept of that Phyſitian and Poet, *Mæoniæ Iliados quartum ſuppone trementi.* There are ſurely few that have beliefe to twallow, or hope enough to experiment the Collyrium of Albertus, which promiſeth a ſtrange effect, and ſuch as Thieves would count ineſtimable; that is, to make one ſee in the darke: yet thus much, according unto his receit, will the right eye of an Hedge-hog boyled in oyle and preſerved in a braſen veſſell effect. As ſtrange it is, and unto vicious inclinations were worth a nights lodging with Lais, what is delivered in Kiranides, that the left ſtone of a Weeſell, wrapt up in the skin of a ſhe Mule, is able to ſecure incontinency from conception.

Theſe with ſwarmes of others have men delivered in their writings, whoſe verities are onely ſupported by their Authorities: but being neither conſonant unto reaſon, nor correſpondent unto experiment, their affirmations are unto us no Axiomes, wee eſteeme thereof as things unſaid, and account them but in the liſt of nothing. I wiſh herein the Chymiſtes had beene more ſparing, who overmagnifying their preparations, inveigle the curioſity of many, and delude the ſecurity of moſt. For if their experiments would anſwer their encomiums, the Stone and Quartane Agues, were not opprobrious unto Phyſitians; And we might contemne that firſt, and moſt uncomfortable Aphoriſme of Hippocrates; *Ars Longa, Vita Brevis.* For ſurely that Art were ſoone attained, that hath ſo generall remedies, and life could not be ſhort, were there ſuch to prolong it.

CHAP.

Chap. VIII.

A briefe enumeration of Authors.

NOw for as much as we have diſcourſed of Authority, and there is ſcarce any tradition or popular error but ſtands alſo delivered by ſome good Author; we ſhall endeavour a ſhort diſcovery of ſuch as for the major part have given authority hereto: who although excellent and uſefull Authors, yet being either tranſcriptive, or following the common relations of things, their accounts are not to be ſwallowed at large, or entertained without a prudent circumſpection. In whom the *ipſe dixit*, although it be no powerfull argument in any, is yet leſſe authentick then in many other, becauſe they deliver not their owne experiences, but others affirmations, and write from others as we our ſelves from them.

1. The firſt in order as alſo in time, ſhall be Herodotus of Halicarnaſſus, an excellent and very elegant Hiſtorian, whoſe books of hiſtory were ſo well received in his owne dayes, that at their rehearſall in the Olympick games, they obtained the names of the nine Muſes, and continued in ſuch eſteeme unto deſcending Ages, that Cicero termed him *Hiſtoriarum parens*. And Dionyſius his Countreyman, in an Epiſtle to Pompey, after an expreſſe compariſon, affords him the better of Thucydides; all which notwithſtanding, he hath received from ſome, the ſtile of *Mendaciorum pater*; his authority was much infringed by Plutarch, who being offended with him, as Polybius had bin with Philarcus, for ſpeaking too coldly of his Countreymen, hath left a particular Tract, *de Malignitate Herodoti*. But in this latter Century, Camerarius and Stephanus have ſtepped in, and by their witty Apologies, effectually endeavoured to fruſtrate the arguments of Plutarch, or any other. Now in this Author, as may be obſerved in our enſuing Diſcourſe, and is better diſcernable in the peruſall of himſelfe, there are many things fabulouſly delivered, and not to be accepted as truthes: whereby nevertheleſſe if any man be deceived, the Author is not ſo culpable as the believer. For he indeed imitating the father Poet, whoſe life he hath alſo written, and as Thucydides obſerveth, as well intending the delight as benefit of his Reader, hath beſprinkled his worke with many fabuloſities, whereby if any man be led into errour, he miſtaketh the intention of the Author, who plainly confeſſeth hee writeth many things by hearſay, and forgetteth a very conſiderable caution of his, that is, *Ego quæ fando cognovi, exponere narratione mea debeo omnia; credere autem eſſe vera omnia, non debeo.*

2. In the ſecond place is Cteſias the Cnidian, Phyſitian unto Artaxerxes King of Perſia, his books are often cited by ancient Writers, and by the induſtry of Stephanus and Rodomanus, there are extant

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ſome fragments thereof in our dayes; he wrote the Hiſtory of Perſia, and many narrations of India. In the firſt as having a fair oportunity to know the truth: And as Diodorus affirmeth the peruſall of Perſian records, his teſtimony is acceptable in his Indiary relations, wherein are contained ſtrange and incredible accounts, he is ſurely to be read with ſuſpenſion; and theſe were they which weakned his authority with former ages, and made him contemptible unto moſt. For as we may obſerve, he is ſeldome mentioned, without a derogatory parentheſis in any Author; Ariſtotle beſides the frequent undervaluing of his authority, in his bookes of Animals gives him the lie no leſſe then twice, concerning the ſeed of Elephants. Strabo in his xi booke hath left a harder cenſure of him. *Equidem facilius Heſiodo & Homero, aliquis fidem adhibuerit, itemque Tragicis Poetis, quam Cteſiæ Herodoto, Hellanico & eorum ſimilibus.* But Lucian hath ſpoken more plainly then any. *Scripſit Cteſias de Indorum regione, deque iis quæ apud illos ſunt, ea quæ nec ipſe vidit, neque ex ullius ſermone audivit.* Yet were his relations taken up by moſt ſucceeding Writers, and many thereof revived by our Country-man, Sir John Mandevell Knight and Doctor in Phyſicke, who after thirty years peregrination dyed at Leige, and was there honourably interred. He left behinde him a booke of his travells, which hath been honoured with the tranſlation of many languages, and hath now continued above three hundred years; herein he often atteſteth the fabulous relations of Cteſias, and ſeems to confirme the refuted accounts of Antiquity: all which may ſtill be received in ſome acceptions of morality, and to a pregnant invention, may afforde commendable mythologie, but in a naturall and proper Expoſition, it containeth impoſſibilities and things inconſiſtent with truth.

3. There is a Book *de mirandis auditionibus*, aſcribed unto Ariſtotle, another *de mirabilibus narrationibus*, written long after by Antigonus, another alſo of the ſame title by Plegon Trallianus tranſlated by Xilander, and with the Annotations of Meurſius; all whereof make good the promiſe of their titles and may be read with caution; which if any man ſhall likewiſe obſerve in the Lecture of Philoſtratus, concerning the life of Apolonius, or not only in ancient Writers, but ſhall carry a wary eye, on Paulus Venetus, Jovius, Olaus Magnus, Nierembergius, and many other, I thinke his circumſpection is laudable, and he may thereby decline occaſion of Error.

4. Dioſcorides Anazarbeus, hee wrote many bookes in Phyſicke, but ſix thereof *de Materia Medica*, have found the greateſt eſteeme; hee is an Author of good Antiquity, and better uſe, preferred by Galen before Cratevas, Pamphilus, and all that attempted the like deſcription before him; yet all hee delivereth therein is not to be conceived Oraculous: For beſide that, following the warres under Anthony, the courſe of his life would not permit a punctuall examen in all; There

are

are many things concerning the nature of ſimples, traditionally delivered, and to which I beleeve he gave no aſſent himſelfe. It had been an excellent receit, and in his time when Sadles were ſcarce in faſhion of very great uſe, if that were true, which he delivers, that Vitex, or Agnus Caſtus held only in the hand, preſerveth the rider from galling. It were a ſtrange effect, and whores would forſake the experiment of Savine. If that were a truth which hee delivereth of Brake or femall fearne, that only treading over it, it cauſeth a ſudden abortion. It were to be wiſhed true, and women would Idolize him, could that be made out which he recordeth of Phyllon, Mercury, and other vegetables, that the juice of the maſle plant drunke, or the leaves but applied unto the genitalls, determines their conceptions unto males. In theſe relations although he be more ſparing, his predeceſſours were very numerous; and Gallen hereof moſt ſharply accuſeth Pamphilus: many of the like nature we meet ſometimes in Oribaſius, Acius, Trallianus, Serapion, Evax, and Marcellus, whereof ſome containing no colour of verity, we may at firſt ſight reject them, others which ſeem to carry ſome face of truth, we may reduce unto experiment. And herein we ſhall rather peforme good offices unto truth, then any diſſervice unto their relators, who have well deſerved of ſucceeding ages, from whom having received the conceptions of former times, we have the readier hint of their conformity with ours, and may accordingly explore their verities.

5. *Plinius Secundus* of Verona, a man of great eloquence, and induſtry indefatigable, as may appeare by the number of the writings, eſpecially thoſe now extant, and which are never like to periſh, but euen with learning it ſelfe, that is, his naturall Hiſtorie compriſed in 36. bookes; hee was the greateſt Collector or Rhapſodiſt of all the Latines, and as Suetonius *de viris Illuſtribus* obſerveth, hee collected this piece out of 2000. Latine and Greeke Authors. Now what is very ſtrange, there is ſcarce a popular errour paſſant in our dayes, which is not either directly expreſſed, or diductively contained in this worke, which being in the hands of moſt men, hath proved a powerfull occaſion of their propogation; wherein notwithſtanding the credulitie of the Reader, is more condemnable then the curioſitie of the Authour. For commonly he nameth the Authors, from whom he received thoſe accounts, and writes himſelfe by heare ſay, as in his Preface unto Veſpaſian he acknowledgeth.

6. Claudius Ælianus, who flouriſhed not long after in the raigne of Trajan, unto whom he dedicated his Tacticks, an elegant and miſcellaneous Author, he hath left two bookes which are in the hands of every one, his Hiſtory of Animals, and his *Varia hiſtoria*, wherein are contained many things ſupicious, not a few falſe, ſome impoſſible; hee is much beholding unto Cteſias, and in many ſubjects writes more confidently then Plinie.

7. Julius

7. Julius Solinus, who lived also about his time: He left a work entituled Polyhistor, containing great varietie of matter, and is with most in good request at this day: but to speake freely what cannot bee concealed, it is but Plinie varied, or a transcription of his naturall historie; nor is it without all wonder it hath continued so long, but is now likely, and deserves indeed to live for ever; not so much for the elegancy of the text, as the excellency of the comment, lately performed by Salmasius, under the name of Plinian exercitations.

8. Athenæus a delectable Author, and very various, and as Causabone in his Epistle stiles him *Græcorum Plinius:* There is extant of his, a famous piece under the name of Deipnosophista, or *cœna sapientum*, containing the discourse of many learned men, at a feast provided by Laurentius. It is a laborious collection out of many Authors, and some whereof are mentioned no where else. It containeth strange and singular relations, not without some spice or sprinckling of all learning. The Author was probably a better Gramarian then Philosopher, dealing but hardly with Aristotle and Plato, and betrayeth himselfe much in his Chapter *de curiositate Aristotelis*. In briefe, he is an Author of excellent use, and may with discretion, be read unto great advantage: and hath therefore well deserved, the Comments of Causabon and Dalecampius: but being miscellaneous in many things, he is to be received with suspicion; for such as amasse all relations, must erre in some, and may without offence be unbeleeved in many.

9. Wee will not omit the workes of Nicander, a Poet of good Antiquity, that is, his Theriaca, and Alexipharmaca, translated and commented by Gorræus: for therein are contained severall traditions, and popular conceits, of venemons beasts, which only deducted, the worke is ever to be embraced, as containing the first description of poysons, and their Antidotes, whereof Dioscorides, Pliny, and Galen, have made especiall use in elder times; and Ardoynus, Grevinus and others, in times more neere our owne. Wee might perhaps let passe Oppianus, that famous Cilician Poet. There are extant of his in Greeke, foure bookes of Cynegeticks or venation, five of Halieuticks or piscation, commented and published by Ritterhusius, wherein describing beasts of venerie, and fishes, hee hath indeed but sparinlgly inserted the vulgar conceptions thereof: so that abating onely the annuall mutation of Sexes in the Hyæna, the single Sex of the Rhinoceros, the antipathy betweene two drummes, of a Lambe and a Wolfes skinne, the informity of Cubbes, the venation of Centaures, the copulation of the Murena and the Viper, with some few others, hee may be read with great delight and profit. It is not without some wonder, his elegant lines are so neglected. Surely hereby wee reject one of the best Epick Poets, and much condemn the judgement of Antoninus, whose apprehensions so honoured his Poems, that as some report, for every verse, hee assigned him a Stater of gold.

10. More

10. More warily are we to receive the relations of Philes, who in Greeke Iambicks delivered the proprieties of Animals, for herein hee hath amaſſed the vulgar accounts recorded by the Ancients, and hath therein eſpecially followed Ælian, and likewiſe Johannes Tzetzes, a Gramarian, who beſides a Comment upon Heſiod and Homer, hath left us Chiliads *de varia Hiſtoria*, wherein delivering the accounts of Cteſias, Herodotus, and moſt of the Ancients, he is to be embraced with caution, and as a tranſcriptive relator.

11. Wee cannot without partialitie omit all caution even of holy Writers, and ſuch whoſe names are venerable unto all poſterity, not to meddle at all with miraculous Authours, or any Legendary relators: Wee are not without circumſpection to receive ſome bookes even of Authentick and renowned Fathers. So are we to read the leaves of Baſil and Ambroſe in their bookes, entituled *Hexameron*, or *The deſcription of the Creation*; Wherein delivering particular accounts of all the Creatures, they have left us relations futable to thoſe of Ælian, Plinie and other naturall Writers; whoſe authorities herein they followed, and from whom moſt probably, they deſumed their Narrations. And the like hath been committed by Epiphanius, in his Phiſiologie, that is, a booke he hath left concerning the nature of Animals. With no leſſe caution muſt we looke on Iſidor, Biſhop of Sevill, who having left in 25. bookes, an accurate worke *de Originibus*, hath to the Etymologie of words, ſuperadded their received natures; wherein moſt generally hee conſents with common opinions and Authors which have delivered them.

12. Albertus Biſhop of Ratisbone, for his great learning and latitude of knowledge ſirnamed Magnus, beſides divinitie, he hath written many Tracts in Philoſophie; what we are chiefly to receive with caution, are his naturall Tractates, more eſpecially thoſe of Mineralls, Vegetables, and Animals, which are indeed chiefly Collections out of Ariſtotle, Ælian, and Plinie, and reſpectively containe many of our popular errors. A man who hath much advanced theſe opinions by the authoritie of his name, and delivered moſt conceits, with ſtrickt enquirie into few. In the ſame claſſis, may well be placed Vincentius Belluacenſis, or rather he from whom he collected his *Speculum naturale*, that is, *Gulielmus de Conchis*, as alſo *Hortus Sanitatis*, and *Bartholomeus Glanvill*, ſirnamed *Anglicus*, who writ *de Proprietatibus rerum*. Hither alſo may be referred Kiranides, which is a collection of Harpocration the Greek, and ſundry Arabick writers; delivering not onely the Naturall but Magicall proprietie of things, a worke as full of vanitie, as varietie, containing many relations, whoſe invention is as difficult as their beliefes, and their experiments ſometime as hard as either.

13. We had almoſt forgot *Ieronymus Cardanus* that famous Phyſi-

tion of Milan a great enquierer of truth, but too greedy a receiver of it, he hath left many excellent discourses, Medicall, Naturall, and Astrologicall; the most suspicious are those two he wrote by admonition in a dream, that is, *de subtilitate & varietate rerum*. Assuredly this learned man hath taken many things upon trust, and although examined some, hath let slip many others. He is of singular use unto a prudent Reader, but unto him that desireth Hoties, or to repleniſh his head with varieties, like many others before related, either in the originall or confirmation, he may become no small occasion of error.

14. Lastly, those Authors are also suspicious, nor greedily to be swallowed, who pretend to write of secrets, to deliver Antipathies, Sympathies, and the occult abstrucities of things, in the list whereof may be accounted, Alexis Pedimont: Antonius Mizaldus, Trinum Magicum, and many others; not omitting that famous Philosopher of Naples, Baptista Porta, in whose workes, although there be contained many excellent things, and verified upon his owne experience; yet are there many also receptary, and such as will not endure the test: who although he have delivered many strange relations in other peices, as his Phylognomy, and his Villa; yet hath he more remarkeably expressed himselfe in his Naturall Magick, and the miraculous effects of Nature: which containing a various and delectable subject, with all promising wondrous and easie effects, they are entertained by Readers at all hands, whereof the major part sit downe in his authority, and thereby omit not onely the certainty of truth, but the pleasure of its experiment.

And thus have we made a briefe enumeration of these learned men, not willing any to decline their Workes, (without which it is not easie to attaine any measure of generall knowledge) but to apply themselves with caution thereunto. And seeing the lapses of these worthy pens, we are to cast a wary eye on those diminutive, and pamphlet Treaties dayly published amongst us, pieces maintaining rather Typography then verity. Authors presumably writing by common places, wherein for many yeares promiscuously amassing all that makes for their subject, they break forth at last in trice and fruitlesse Rapsodies, doing thereby not onely open injury unto learning, but committing a secret treachery upon truth. For their relations falling generally upon credulous Readers, they meet with prepared beliefes, whose supinities had rather assent unto all, then adventure the triall of any.

Thus, I say, must these Authors be read, and thus must we be read our selves, for discoursing of matters dubious, and many controvertible truths, we cannot without arrogancy entreate a credulity, or implore any farther assent, then the probability of our reasons, and verity of experiments induce.

CHAP.

Chap. IX.

Of the same.

THere are beside these Authors and such as have positively promoted errors, diverse other which are in some way accessory, whose verities although they do not directly assert, yet doe they obliquely concurre unto their beliefes. In which account are many holy Writers, Preachers, Moralists, Rhetoricians, Orators and Poets; for they depending upon invention deduce their mediums from all things whatsoever, and playing much upon the smile, or illustrative argumentation, induce their Enthymemes unto thê people, they take up popular conceits, and from traditions unjustifiable or really false, illustrate matters, though not of consequence, yet undeniable truths. Wherein although their intention be sincere, and that course not much condemnable, yet are the effects thereof unwarrantable, in as much as they strengthen common errors, and confirme as veritable those conceits, which verity cannot allow.

Thus have some Divines drawne into argument the fable of the Phœnix, made use of that of the Salamander, Pellican, Basilisk, and divers relations of Pliny, deducing from thence most worthy morals, and even upon our Saviour. Now although this be not prejudicial unto wiser judgements, who are indeed but weakly moved with such kind of argument, yet is it oftentimes occasion of error unto vulgar heads, who expect in the fable as equall a truth as in the morall, and conceive that infallible Philosophy, which is in any sence delivered by Divinity. But wiser discerners do well understand, that every Art hath its owne circle, that the effects of things are best examined, by sciences wherein are delivered their causes, that strict and definitive expressions, are alway required in Philosophy, but a loose and popular delivery will serve oftentimes in Divinity; as may be observed even in holy Scripture, which often omitteth the exact account of things, describing them rather to our apprehensions, then leaving doubts in vulgar minds, upon their unknowne and Philosophicall descriptions. Thus it termeth the Sun and the Moone, the two great lights of heaven. Now if any man shall from hence conclude, the Moone is second in magnitude unto the Sun, he must excuse my beliefe; and I thinke it cannot be taken for heresie, if I herein rather adhere unto the demonstration of Ptolomy, then the popular description of Moses. Thus is it said, Chron. 2. 4. That Solomon made a molten sea of ten cubits, from brim to brim round in compasse, and five cubits the height thereof, and a line of thirty cubits did compasse it round about. Now in this description, the circumference is made just treble unto the diameter, that is, 10. to 30. or 7. to 21. But Archimedes demonstrates in his Cyclometria,

that the proportion of the diameter, unto the circumference, is as 7 unto almoſt 22, which will occaſion a ſenſible difference that is almoſt a cubit. Now if herein I adhere unto Archimedes who ſpeaketh exactly rather then the ſacred Text which ſpeaketh largely, I hope I ſhall not offend Divinity. I am ſure I ſhall have reaſon and experience of every circle to ſupport me.

Thus Morall Writers, Rhetoricians and Orators make uſe of ſeverall relations which will not conſiſt with verity. Ariſtotle in his Ethicks takes up the conceit of the Bever, and the divulſion of his Teſticles. The tradition of the Beare, the Viper, and divers others are frequent amongſt Orators. All which although unto the illiterate, and undiſcerning hearers may ſeem a confirmation of their reallities; yet is this no reaſonable eſtabliſhment unto others, who will not depend hereon otherwiſe then common Apologues, which being of impoſſible falſities do notwithſtanding include wholeſome moralities, and ſuch as do expiate the treſpaſſe of their abſurdities.

The Hieroglyphicall doctrine of the Egyptians (which in their four hundred yeares cohabitation, ſome conjecture they learned from the Hebrewes) hath much advanced many popular conceits, for uſing an Alphabet of things, and not of words, through the Image and pictures thereof, they endeavoured to ſpeak their hidden conceits, in the letters and language of nature; in purſuit whereof, although in many things, they exceeded not their true, and reall apprehenſions, yet in ſome other they either framing the ſtory, or taking up the tradition, conduceable unto their intentions, obliquely confirmed many falſities, which as authentick and conceded truths did after paſſe unto the Greeks, from them unto other Nations, are ſtill retained by ſymbolicall writers, Emblematiſtes, Heraldes and others, whereof ſome are ſtrictly maintained for truths, as naturally making good their artificiall repreſentations; others ſymbolically intended are literally received, and ſwallowed in the firſt ſenſe, without all guſt of the ſecond. Famous in this doctrine in former ages were Heraiſcus, Cheremon, and Epius, eſpecially Orus, Apollo, Niliacus, who lived in the reigne of Theodoſius and in Ægyptian language left two bookes of Hieroglyphicks, tranſlated into Greek by Philippus, in Latine publiſhed by Hoſchelius, and a full collection of all made lately by Pierius.

Painters who are the viſible repreſenters of things, and ſuch as by the learned ſenſe of the eye endeavour to informe the underſtanding, are not inculpable herein, who either deſcribing naturalls as they are, or actions as they have been, have oftentimes erred in their delineations, which being the bookes that all can read, are fruitfull advancers of theſe conceptions, eſpecially in common and popular apprehenſions, who being unable for farther enquiry muſt reſt in the text, and letter of their deſcriptions.

Laſtly,

Lastly, Poets and Poeticall Writers have in this point exceeded others, leaving unto us the notions of Harpes, Centaurs, Gryphins, and divers others. Now how ever to make use of fictions, Apologues and fables be not unwarrantable, and the intent of these inventions might point at laudable ends: Yet doe they afford to our junior capacities a frequent occasion of error, setling impressions in our tender memories, which our advanced judgements, doe generally neglect to expunge. This way the vaine and idle fictions of the Gentils, did first insinuate into the heads of Christians, and thus are they continued even unto our dayes: Our first and literary apprehensions being commonly instructed in Authors which handle nothing else; wherewith our memories being stuffed, our inventions become Pedantick, and cannot avoid their allusions, driving at these as at the highest elegancies, which are but the frigidities of wit, and become not the genius of our more manly ingenuities. It were therefore no losse like that of Galens study; if these had found the same fate, and would in some way requite the neglect of solid Authors, if they were lesse pursued. For surely were a pregnant wit educated in ignorance hereof, receiving only impressions from realities, from such solid foundations, it must needs raise more substantiall superstructions, and fall upon very many excellent straynes, which have been jusled off by their intrusions.

Chap. X.

Of the last and common promoter of false Opinions, the endeavours of Satan.

But beside the infirmities of humane nature, the seed of error within our selves, and the severall wayes of delusion from each other, there is an invisible Agent, and secret promoter without us, whose activity is undiscerned, and playes in the darke upon us, and that is the first contriver of Error, and professed opposer of Truth, the Divell. For though permitted unto his proper principles, Adam perhaps would have sinned, without the suggestion of Satan, and from the transgressive infirmities of himselfe might have erred alone, as well as the Angels before him. And although also there were no divell at all, yet is there now in our natures a confessed sufficiency unto corruption; and the frailty of our owne Oeconomie, were able to betray us out of truth; yet wants there not another Agent, who taking advantage hereof, proceedeth to obscure the diviner part, and efface all tract of its traduction, to attempt a particular of all his wiles, is too bold an Arithmetick for man, what most considerably concerneth his popular, and practised wayes of delusion, he first deceiveth mankinde in five maine points concerning God and himselfe.

And first his endeavours have ever been, and they cease not yet to instill

inſtill a beleefe in the minde of man, There is no God at all; and this he ſpecially labours to eſtabliſh in a direct and literall apprehenſion, that is, that there is no ſuch reallity exiſtent, that the neceſſity of his entity dependeth upon ours, and is but a politicall Chymera; That the naturall truth of God is an artificiall erection of man, and the Creator himſelfe but a ſubtile invention of the creature. Where hee ſucceeds not thus high, he labours to introduce a ſecendary and deductive Atheiſme, that although they concede there is a God, yet ſhould they deny his providence; and therefore aſſertions have flown about, that he intendeth only the care of the ſpecies or common natures, but letteth looſe the guard of individualls, and ſingle eſſences therein: That hee looks not below the Moone, but hath deſigned the regiment of ſublunary affaires unto inferiour deputations; to promote which apprehenſions or empuzzell their due conceptions, he caſteth in the notions of fate, deſtiny, fortune, chance and neceſſity; tearms commonly miſconceived by vulgar heads, and their propriety ſometime perverted by the wiſeſt. Whereby extinguiſhing in mindes the compenſation of vertue and vice, the hope and feare of heaven or hell, they comply in their actions unto the drift of his deluſions, and live like creatures below the capacity of either.

Now hereby he not only undermineth the Baſe of religion, and deſtroyeth the principle preambulous unto all beliefe, but puts upon us the remoteſt error from truth. For Atheiſme is the greateſt falſity, and to affirme there is no God the higheſt lie in Nature: and therefore ſtrictly taken, ſome men will ſay his labour is in vaine; For many there are, who cannot concive there was ever any abſolute Atheiſt, or ſuch as could determine there was no God, without all checke from himſelfe, or contradiction from his own opinions; and therefore thoſe few ſo called by elder times, might be the beſt of Pagans, ſuffering that name rather, in relation to the gods of the Gentiles, then the true Creatour of all. A conceit that cannot befall his greateſt enemy, or him that would induce the ſame in us, who hath a ſenſible apprehenſion hereof, for he beleeveth with trembling. To ſpeake yet more ſtrictly and conformably unto ſome opinions, no creature can wiſh thus much, nor can the will which hath a power to runne into velleities, and wiſhes of impoſſibilities, have any *utinam* of this. For to deſire there were no God, were plainly to unwiſh their owne being, which muſt needes be anihilated in the ſubſtraction of that eſſence, which ſubſtantially ſupporteth them, and reſtraines them from regreſſion into nothing. And if as ſome contend, no creature can deſire his owne anihilation, that nothing is not appetible, and not to be at all, is worſe then to bee in the miſerable condition of ſomething; the divell him ſelfe could not embrace that motion, nor would the enemy of God be freed by ſuch a Redemption.

But

But coldly thriving in this deſigne, as being repulſed by the principles of humanity, and the Dictates of that production, which cannot deny its originall, he fetcheth a wider cirle, and when he cannot make men conceive there is no God at all, hee endeavours to make them beleeve, there is not one but many; wherein he hath been ſo ſucceſſefull with common heads, that hee hath lead their beliefe thorow all the workes of Nature.

Now in this latter attempt, the ſubtilty of his circumvenſion, hath indirectly obtained the former. For although to opinion there be many gods, may ſeem an exceſſe in Religon, and ſuch as cannot at all conſiſt with Atheiſme, yet doth it diductively and upon inference include the ſame: for unity is the inſeparable and eſſentiall attribute of Deitie; And if there be more then one God, it is no Atheiſme to ſay there is no God at all. And herein though Socrates onely ſuffered, yet were Plato and Ariſtotle guilty of the ſame truth, who demonſtratively underſtanding the ſimplicity of perfection, and the indiviſible condition of the firſt cauſator, it was not in the power of earth, or Areopagy of hell to work them from it. For holding an Apodicticall knowledge, and aſſured ſcience of its verity, to perſwade their apprehenſions unto a plurality of gods in the world, were to make Euclide beleeve there were more then one Center in a Circle, or one right Angle in a Triangle; which were indeed a fruitleſſe attempt, and inferreth abſurdities beyond the evaſion of hell. For though Mechanicke and vulgar heads aſcend not unto ſuch comprehenſions, who live not commonly unto halfe the advantage of their principles, yet did they not eſcape the eye of wiſer Minervaes, and ſuch as made good the genealogie of Jupiters braines, who although they had divers ſtyles for God, yet under many apellations acknowledged one divinity: rather conceiving thereby the evidence or acts of his power in ſeverall wayes and places, then a multiplication of Eſſence, or reall diſtraction of unity in any one.

Areopagus *the ſevere Court of Athens.*

Againe, to render our errors more monſtrous, (and what unto miracle ſets forth the patience of God) hee hath endeavored to make the world beleeve, that he was God himſelfe, and fayling of his firſt attempt to be but like the higheſt in heaven, he hath obtained with men to be the ſame on earth, and hath accordingly aſſumed the annexes of divinity, and the prerogatives of the Creator, drawing into practiſe the operation of miracles, and the preſcience of things to come. Thus hath he in a ſpecious way wrought cures upon the ſick: played over the wondrous acts of Prophets, and counterfeited many miracles of Chriſt and his Apoſtles. Thus hath he openly contended with God; And to this effect his inſolency was not aſhamed to play a ſolemne prize with Moſes, wherein although his performance was very ſpecious, and beyond the common apprehenſion of any power below a Dietie, yet was it not ſuch as could make good his Omnipotency. For

he

he was wholly confounded in the converſion of duſt into lice. An act Philoſophy can ſcarce deny to be above the power of Nature, nor upon a requiſite prediſpoſition beyond the efficacy of the Sun. Wherein notwithſtanding the head of the old Serpent was confeſſedly too weak for Moſes hand, & the arm of his Magicians too ſhort for the finger of God.

Thus hath he alſo made men beleeve that he can raiſe the dead, that he hath the key of life and death, and a prerogative above that principle which makes no regreſſion from privations. The Stoicks that opinioned the ſoules of wiſe men, dwelt about the Moone, and thoſe of fooles wandred about the earth, advantaged the conceit of this effect, wherein the Epicureans, who held that death was nothing, nor nothing after death, muſt contradict their principles to be deceived. Nor could the Pythagorian or ſuch as maintained the tranſmigration of ſouls give eaſie admittance hereto: for holding that ſeparated ſoules, ſucceſſively ſupplyed other bodies, they could hardly allow the raiſing of ſoules from other worlds, which at the ſame time, they conceived conjoyned unto bodies in this. More inconſiſtent with theſe opinions, is the error of Chriſtians, who holding the dead doe reſt in the Lord, doe yet beleeve they are at the lure of the divell; that he who is in bonds himſelf commandeth the fetters of the dead, and dwelling in the bottomleſſe lake, the bleſſed from Abrahams boſome. That can beleeve the reſurrection of Samuel, or that there is any thing but deluſion, in the practiſe of Necromancy and popular conception of Ghoſts.

He hath moreover endeavoured the opinion of Deitie, by the deluſion of Dreames, and the diſcovery of things to come, in ſleepe above the preſcience of our waked ſenſes. In this expectation he perſwaded the credulity of elder times to take up their lodging before his temple, in skinnes of their owne ſacrifices, till his reſervedneſſe had contrived anſwers, whoſe accompliſhments were in his power, or not beyond his preſagement. Which way although it hath pleaſed Almightie God, ſometimes to reveale himſelf, yet was their proceeding very different. For the revelations of heaven are conveied by new impreſſions, and the immediate illumination of the ſoule; whereas the deceaving ſpirit, by concitation of humors, produceth his conceited phantaſmes, or by compounding the ſpecies already reſiding, doth make up words which mentally ſpeake his intentions.

But above all other hee moſt advanced his Deitie in the ſolemne practiſe of Oracles, wherein in ſeverall parts of the world, he publikely profeſſed his divinity; but how ſhort they flew, of that ſpirit, whoſe omniſcience they would reſemble, their weakneſſe ſufficiently declared. What jugling there was therein, the Oratour plainely confeſſed, who being good at the ſame game himſelfe, could ſay that Pythia Phillippiſed: who can but laugh at the carriage of Ammon unto Alexander, who addreſſing unto him as God, was made to beleeve, hee was

a god

a god himself? How openly did he betray his Indivinity unto Cræsus, who being ruined by his Amphibologie, and expostulating with him for so ungratefull a deceit, received no higher answer, then the excuse of his impotency upon the contradiction of fate, and the setled law of powers beyond his power to controle what more then sublunary directions, or such as might proceed from the oracle of humane reason, was in his advice unto the Spartans in the time of a great plague; when for the cessation thereof, he wisht them to have recourse unto a Fawn, that is in open tearms unto one Nebrus, a good Physition of those dayes. From no diviner a spirit came his reply unto Caracalla, who requiring a remedy for his gout, received no other counsell then to refraine cold drinke, which was but a dieteticall caution, and such as without a journey unto Æsculapius culinary prescription and kitchin Aphorismes, might have afforded at home. Nor surely if any truth there were therein of more then naturall activity was his counsell unto Democritus, when for the falling sickneſſe he commended the Maggot in a Goats head; for many things secret are very true, sympathyes and antipathyes are safely authenticke unto us, who ignorant of their causes may yet acknowledge their effects. Beside being a naturall Magician he may performe many acts in wayes above our knowledge, though not transcending our naturall power, when our knowledge shall direct it; part hereof hath been discovered by himselfe, and some by humane indagation which though magnified as fresh inventions unto us, are stale unto his cognition: I hardly beleeve, he hath from elder times unknowne the verticity of the loadstone; surely his perspicacity discerned it to respect the North, when ours beheld it indeterminately. Many secrets there are in nature of difficult discovery unto man, of naturall knowledge unto Satan, whereof some his vain-glory cannot conceale, others his envy will never discover.

Nebros in Greek, a Fawne.

Againe, such is the mystery of his delusion, that although he labour to make us beleeve that he is God, and supremest nature whatsoever, yet would he also perswade our beleefes that he is lesse then Angels or men, and his condition not only subjected unto rationall powers, but the action of things which have no efficacy on our selves; thus hath hee inveigled no small part of the world into a credulity of artificiall Magick. That there is an Art, which without compact commandeth the powers of hell, whence some have delivered the polity of spirits, and left an account even to their Provinciall dominions, that they stand in awe of charmes, spells and conjurations, that he is afraid of letters and characters of notes and dashes, which set together doe signifie nothing; and not only in the dictionary of man, but the subtiler vocabulary of Satan. That there is any power in Bitumen, pitch or brimstone, to purifie the aire from his uncleanneſſe, that any vertue there is in Hipericon to make good the name of *fuga Demonis*, any such magick as is ascri-

bed unto the root Baaras by Josephus or Cynospastus by Ælianus, it is not easie to beleeve, nor is it naturally made out what is delivered of Tobias, that by the fume of a fishes liver, he put to flight Asmodeus. That they are afraid of the pentangle of Solomon, though so set forth with the body of man, as to touch and point out the five places wherein our Saviour was wounded. I know not how to assent if perhaps he hath fled from holy water, if he cares not to heare the sound of Tetragrammaton, if his eye delight not in the signe of the Crosse, and that sometimes he will seem to be charmed with words of holy Scripture, and to flye from the letter and dead verbality, who must only start at the life and animated interiors thereof. It may be feared they are but Parthian flights, Ambuscado retreats, and elusory tergiversations, whereby to confirme our credulities, he will comply with the opinion of such powers which in themselves have no activities, whereof having once begot in our mindes an assured dependence, he makes us relye on powers which he but precariously obeyes, and to desert those true and only charmes which hell cannot withstand.

Lastly, to lead us farther into darkenesse, and quite to lose us in this maze of error, he would make men beleeve there is no such creature as himselfe, and that hee is not onely subject unto inferiour creatures but in the ranke of nothing: Insinuating into mens mindes there is no divell at all and contriveth accordingly, many wayes to conceale or indubitate his existency: wherein beside that hee anihilates the blessed Angels and spirits in the ranke of his creation, hee begets a security of himselfe and a careless eye unto the last remunerations. And therefore hereto he inveigleth, not only the Sadduces and such as retaine unto the Church of God, but is also content that Epicurus Democritus or any of the heathen should hold the same. And to this effect he maketh men beleeve that apparitions, and such as confirme his existence are either deceptions of sight, or melancholy depravements of phancy: Thus when he had not only appeared but spake unto Brutus, Cassius, the Epicurian was ready at hand to perswade him it was but a mistake in his weary imagination, and that indeed there were no such realities in nature. Thus he endeavours to propagate the unbelief of witches, whose concession infers his coexistency, and by this means also he advanceth the opinion of totall death, and staggereth the immortality of the soul: for those which deny there are spirits subsistent without bodies, will with more difficulty affirme the separated existence of their own.

Now to induce and bring about these falsities he hath laboured to destroy the evidence of truth, that is the revealed verity and written word of God. To which intent he hath obtained with some to repudiate the books of Moses, others those of the Prophets, and some both to deny the Gospell and authentick histories of Christ, to reject that of John, and receive that of Judas, to disallow all and erect another of

Thomas.

Thomas. And when neither their corruption by Valentinus and Arrian, their mutilation by Marcion, Manes and Ebion could satisfie his designe, he attempted the ruine and totall destruction thereof, as he sedulously endeavoured, by the power and subtilty of Julian, Maximinus and Diocletian.

But the longevity of that peece, which hath so long escaped the common fate, and the providence of that Spirit which ever waketh over it, may at last discourage such attempts; and if not, make doubtfull its mortality, at least indubitably declare, this is a stone too bigge for Saturnes mouth, and a bit indeed Oblivion cannot swallow.

And thus how strangely hee possesseth us with errors may clearely be observed, deluding us into contradictory and incorsistent falsities, whilest he would make us beleeve: That there is no God. That there are many. That he himselfe is God. That he is lesse then Angels or Men. That he is nothing at all. Nor hath hee onely by these wiles depraved the conception of the Creator, but with such riddles hath also entangled the Nature of our Redeemer. Some denying his humanity, and that he was one of the Angels, as Ebion; that the Father and Sonne were but one person, as Sabellius. That his body was phantasticall, as Manes, Basilides, Priscillian, Jovinianus; that hee onely passed through Mary, as Eutichus and Valentinus. Some deny his Divinity, that he was begotten of humane principles, and the seminall sonne of Joseph, as Carpocras, Symmachus, Photinus. That hee was Seth the sonne of Abraham, as the Sethians. That hee was lesse then Angells, as Cherinthus. That hee was inferiour unto Melchisedech, as Theodotus. That he was not God, but God dwelt in him, as Nicolaus. And some embroyled them both. So did they which converted the Trinity into a quaternity, & affirmed two persons in Christ, as Paulus Samosatenus; that held he was man without a soul, and that the word performed that office in him, as Apollinaris. That he was both Sonne and Father, as Montanus. That Jesus suffered, but Christ remained impatible, as Cherinthus. And thus he endeavours to entangle truths: And when he cannot possibly destroy its substance he cunningly confounds its apprehensions, that from the inconsistent and contrary determinations thereof, collective impieties, and hopefull conclusion may arise, there's no such thing at all.

Chap. XI.

A further Illustration.

NOw although these wayes of delusions, most Christians have escaped, yet are there many other whereunto we are dayly betrayed; and these we meet with in visible and obvious occurrents of the world,

wherein he induceth us, to aſcribe effects unto cauſes of no cognation, and diſtorting the order and theorie of cauſes perpendicular to their effects, he drawes them aſide unto things whereto they runne parallel, and in their proper motions would never meet together.

Thus doth he ſometime delude us in the conceits of Starres and Meteors, beſide their allowable actions aſcribing effects thereunto of independent cauſations. Thus hath he alſo made the ignorant ſort beleeve that naturall effects immediatly and commonly proceed from ſupernaturall powers, and theſe he uſually derives from heaven; and his owne principality the ayre, and meteors therein, which being of themſelves, the effects of naturall and created cauſes, and ſuch as upon a due conjunction of actives and paſſives, without a miracle muſt ariſe unto what they appeare, are alwayes looked on by the ignorant ſpectators as ſupernaturall ſpectacles, and made the cauſes or ſigns of moſt ſucceeding contingencies. To behold a Rain-bow in the night, is no prodigie unto a Philoſopher. Then eclipſes of Sun or Moon, nothing is more naturall. Yet with what ſuperſtition they have been beheld ſince the Tragedy of Niceas, and his Army, many examples declare.

True it is, and we will not deny it, that although theſe being naturall productions from ſecond and ſetled cauſes, we need not alway looke upon them as the immediate hands of God, or of his miniſtring Spirits, yet doe they ſometimes admit a reſpect therein, and even in their naturalls, the indifferencie of their exiſtences contemporiſed unto our actions, admits a farther conſideration.

That two or three Suns or Moons appeare in any mans life or reign, it is not worth the wonder, but that the ſame ſhould fall out at a remarkable time, or point of ſome deciſive action, that the contingencie of its appearance ſhould be confined unto that time. That thoſe two ſhould make but one line in the booke of fate, and ſtand together in the great Ephemerides of God, beſide the Philoſophical aſſignment of the cauſe, it may admit a Chriſtian apprehenſion in the ſignality.

But above all he deceiveth us when wee aſcribe the effects of things unto evident & ſeeming cauſalities which ariſe from the ſecret & undiſcerned action of himſelf. Thus hath he deluded many Nations in his Auguriall and Extiſpicious inventions, from caſuall and uncontrived contingences divining events ſucceeding. Which Fuſcan ſuperſtition firſt ceaſing upon Rome hath ſince poſſeſſed all Europe. When Auguſtus found two galls in his ſacrifice, the credulity of the City concluded a hope of peace with Anthony, and the conjunctions of perſons in choler with each other. Becauſe Brutus and Caſſius met a Blackmore, and Pompey had on a darke or ſad coloured garment at Pharſalia; theſe were preſages of their overthrow, which notwithſtanding are ſcarce Rhetoricall ſequells, concluding metaphors from realities, and from conceptions metaphoricall inferring realities again.

Now

Now theſe divinations concerning events being in his power, to force, contrive, prevent or further, they muſt generally fall out conformably unto his predictions. When Graceus was ſlaine, the ſame day the Chickens refuſed to come out of the coope. And Claudius Pulcher underwent the like ſucceſſe, when he contemned the Tripudiary Augurations. They dyed not becauſe the Pullets would not feed, but becauſe the devill foreſaw their death, he contrived that abſtinence in them. So was there no naturall dependance of the event upon the ſigne, but an artificall contrivance of the ſigne unto the event. An unexpected way of deluſion, and whereby he more eaſily led away the incercumſpection of their beliefe. Which fallacy he might excellently have acted, before the death of Saul, which being in his power to foretell, was not beyond his ability to foreſhew, and might have contrived ſignes thereof through all the creatures, which viſibly confirmed by the event, had proved authentick unto thoſe times, and advanced the Art ever after.

He deludeth us alſo by Philters, Ligatures, Charmes, ungrounded Amulets, Characters, and many ſuperſtitious wayes in the cure of common diſeaſes, ſeconding herein the expectation of men with events of his owne contriving: which while ſome unwilling to fall directly upon Magick, impute unto the power of imagination, or the efficacy of hidden cauſes, he obtaines a bloody advantage; for thereby he begets not onely a falſe opinion, but ſuch as leadeth the open way of deſtruction; In maladies admitting naturall relieſes, making men rely on remedies, neither of reall operation in themſelves, nor more then ſeeming efficacy in his concurrence, which whenſoever he pleaſeth to withdraw, they ſtand naked unto the miſchiefe of their diſeaſes, and revenge the contempt of the medicines of the earth which God hath created for them. And therefore when neither miracle is expected, nor connexion of cauſe unto effect from naturall grounds concluded; however it be ſometime ſucceſſefull, it cannot be ſafe to rely on ſuch practiſes, and deſert the knowne and authentick proviſions of God. In which ranke of remedies, if nothing in our knowledge or their proper power be able to relieve us, wee muſt with patience ſubmit unto that reſtraint, and expect the will of the Reſtrainer.

Now in theſe effects although he ſeeme oft times to imitate, yet doth hee concurre unto their productions in a different way from that ſpirit which ſometime in naturall meanes produceth effects above Nature; For whether he worketh by cauſes which have relation or none unto the effect, he maketh it out by ſecret and undiſcerned wayes of Nature. So when Caius the blinde, in the reigne of Antonius, was commanded to paſſe from the right ſide of the Altar unto the left, to lay five fingers of one hand thereon, and five of the other upon his eyes, although the cure ſucceeded and all the people wondered, there

was

was not any thing in the action which did produce it, nor any thing in his power that could enable it thereunto. So for the same infirmity, when Aper was counselled by him to make a collyrium or ocular medicine with the bloud of a white Cock, and honey, and apply it to his eyes for three dayes. When Julian for his hæmoptysis or spitting of bloud, was cured by hony and pine Nuts taken from his Altar. When Lucius for the paine in his side, applyed thereto the ashes from his Altar with wine, although the remedies were somewhat rationall, and not without a naturall vertue unto such intentions, can we beleeve that by their proper faculties they produced these effects?

But the effects of powers Divine flow from another operation, who either proceeding by visible meanes, or not unto visible effects, is able to conjoyne them by his cooperation. And therefore those sensible wayes which seeme of indifferent natures, are not idle ceremonies, but may be causes by his command, and arise unto productions beyond their regular activities. If Naaman the Syrian had washed in Jordan without the command of the Prophet, I beleeve he had beene cleansed by them no more then by the waters of Damascus. I doubt if any beside Elisha had cast in salt, the waters of Jericho had not bin made wholesome thereby. I know that a decoction of wilde gourd or Colocynthis, though somewhat qualified, will not from every hand be dulcified unto aliment by an addition of flower or meale. There was some naturall vertue in the plaster of figs applyed unto Ezechias; we finde that gall is very mundificative, and was a proper medicine to cleere the eyes of Tobit; which carrying in themselves some action of their owne, they were additionally promoted by that power which can extend their natures unto the production of effects beyond their created efficiencies. And thus may he operate also from causes of no power unto their visible effects; for he that hath determined their actions unto certaine effects, hath not so emptied his own but that he can make them effectuall unto any other.

Againe, although his delusions run highest in points of practise, whose errors draw on offensive or penall enormities, yet doth he also deale in points of speculation, and things whose knowledge terminates in themselves, whose cognition although it seemes independent, and therefore its aberration directly to condemne no man; Yet doth he hereby preparatively dispose us unto errors, and deductively deject us into destructive conclusions.

That the Sun, Moone and Stars are living creatures, endued with soule and life, seemes an innocent error, and a harmelesse digression from truth; yet hereby he confirmed their Idolatry, and made it more plausibly embraced. For wisely mistrusting that reasonable spirits would never firmely be lost in the adorement of things inanimate, and in the lowest forme of Nature, he begat an opinion that they were living

ving creatures, and could not decay for ever.

That ſpirits are corporeall, ſeemes at firſt view a conceit derogative unto himſelfe, and ſuch as he ſhould rather labour to overthrow; yet hereby he eſtabliſheth the doctrine of Luſtrations, Amulets and Charmes, as we have declared before.

That there are two principles of all things, one good, and another evill; from the one proceeding vertue, love, light, and unity; from the other diviſion, diſcord, darkneſſe and deformity, was the ſpeculation of Pythagoras, Empedocles, and many ancient Philoſophers, and was no more then Oromaſdes and Arimanius of Zoroaſter; yet hereby he obtained the advantage of Adoration, and as the terrible principle became more dreadfull then his Maker, and therefore not willing to let it fall, he furthered the conceit in ſucceeding Ages, and raiſed the faction of Manes to maintaine it.

That the feminine ſex have no generative emiſſion, affording rather place then principles of conception, was Ariſtotles opinion of old, maintained ſtill by ſome, and will be countenanced by him for ever. For hereby he diſparageth the fruit of the Virgin, and fruſtrateth the fundamentall Propheſie, nor can the ſeed of the woman then breake the head of the Serpent.

Nor doth he onely ſport in ſpeculative errors, which are of conſequent impieties, but the unquietneſſe of his malice hunts after ſimple lapſes, and ſuch whoſe falſities do onely condemne our underſtandings. Thus if Xenophanes will ſay there is an other world in the Moone; If Heraclitus with his adherents will hold the Sunne is no bigger then it appeareth; If Anaxagoras affirme that Snow is black; If any other opinion there are no Antipodes, or that the Stars do fall, ſhall he want herein the applauſe or advocacy of Satan. For maligning the tranquility of truth, he delighteth to trouble its ſtreames, and being a profeſſed enemy unto God, (who is truth it ſelfe) he promoteth any error as derogatory to his nature, and revengeth himſelfe in every deformity from truth. If therefore at any time he ſpeake or practiſe truth it is upon deſigne, and a ſubtile inverſion of the precept of God, to doe good that evill may come of it. And therefore ſometimes wee meet with wholeſome doctrines from hell, *Noſſe teipſum*: The Motto of Delphos was a good precept in morality, That a juſt man is beloved of the gods, an uncontroulable verity. Twas a good deed, though not well done, which he wrought by Veſpaſian, when by the touch of his foot he reſtored a laine man, and by the ſtroake of his hand another that was blinde; but the intention hereof drived at his owne advantage, for hereby hee not onely confirmed the opinion of his power with the people, but his integrity with Princes, in whoſe power he knew it lay to overthrow his Oracles, and ſilence the practiſe of his deluſions.

But

But indeed of ſuch a diffuſed nature, and ſo large is the Empire of truth, that it hath place within the walles of hell, and the divels themſelves are dayly forced to practiſe it; not only as being true themſelves in a Metaphyſicall verity, that is, as having their eſſence conformable unto the Intellect of their maker, but making uſe of Morall and Logicall verities, that is, whether in the conformity of words unto things, or things unto their owne conceptions, they practiſe truth in common among themſelves. For although without ſpeech they intuitively conceive each other, yet doe their apprehenſions proceed through realities, and they conceive each other by ſpecies, which carry the true and proper notions of things conceived. And ſo alſo in Morall verities, although they deceive us, they lye not unto each other; as well underſtanding that all community is continued by truth, and that of hell cannot conſiſt without it.

To come yet nearer to the point and draw into a ſharper angle; They doe not onely ſpeake and practiſe truth, but may bee ſaid well-wiſher thereunto, and in ſome ſenſe doe really deſire its enlargement. For many things which in themſelves are falſe, they doe deſire were true; Hee cannot but wiſh hee were as he profeſſeth, that hee had the knowledge of future events, were it in his power, the Jewes ſhould be in the right, and the Meſſias yet to come. Could his deſires effect it, the opinion of Ariſtotle ſhould be true, the world ſhould have no end, but be as Immortall as himſelfe. For thereby hee might evade the accompliſhment of thoſe afflictions, he now but gradually endureth, for comparatively unto thoſe flames hee is but yet in Balneo, then begins his *Ignis Rotæ* and terrible fire, which will determine his diſputed ſubtiltie, and hazard his immortality.

But to ſpeake ſtrictly, hee is in theſe wiſhes no promoter of verity, but if conſidered ſome wayes injurious unto truth, for (beſides that if things were true, which now are falſe, it were but an exchange of their natures, and things muſt then be falſe, which now are true) the ſetled and determined order of the world would bee perverted, and that courſe of things diſturbed, which ſeemed beſt unto the wiſe contriver. For whileſt they murmure againſt the preſent diſpoſure of things, regulating their determined realityes unto their private optations, they reſt not in their eſtabliſhed natures, but unwiſhing their unalterable verities, doe tacitely deſire in them a diſformitie from the primitive rule, and the Idea of that minde that formed all things beſt. And thus hee offended truth even in his firſt attempt; For not content with his created nature, and thinking it too low, to be the higheſt creature of God, he offended the ordainer thereof, not onely in the attempt, but in the wiſh and ſimple volition thereof.

THE

THE SECOND BOOK:

Of ſundry popular Tenents concerning Minerall, and vegetable bodies, generally held for trueth, which examined, prove either falſe, or dubious.

Chap. I.

Of Cryſtall.

HEreof the common opinion hath been, and ſtill remaineth amongſt us, that Cryſtall is nothing elſe, but Ice or Snow concreted, and by duration of time, congealed beyond liquation. Of which aſſertion, if the preſcription of time, and numerofitie of Aſſertors, were a ſufficient demonſtration, we might ſit downe herein, as an unqueſtionable truth; nor ſhould there need *vlterior* diſquiſition. For indeed, few opinions there are, which have found ſo many friends, or been ſo popularly received, through all profeſſions and ages. And firſt, Plinie is poſitive in this opinion: *Cryſtallus fit gelu vehementius concreto:* the ſame is followed by Seneca, and Elegantly deſcribed by Claudian, not denyed by Scaliger, and ſome way affirmed by Albertus, Braſavolus, and directly by many others. The venerable Fathers of the Church have alſo aſſented hereto; As Baſil in his Hexameron, Iſidore in his Etymologies, and not onely Auſtin a Latine Father, but Gregory the great, and Jerom upon occaſion of that terme, expreſſed in the firſt of Ezekiel.

All which notwithſtanding upon a ſtrict enquiry, we finde the matter controvertible, and with much more reaſon denyed then is as yet affirmed. For firſt, though many have paſſed it over with eaſie affirmatives; yet are there alſo many Authors that deny it, and the exacteſt Mineralogiſts have rejected it. Diodorus in his eleventh booke denyeth it, If Cryſtall be there taken in its proper acception, as Rhodiginus hath uſed it, and not for a Diamond, as Salmatius hath expounded

it; for in that place he affirmeth. *Cryſtallum eſſe lapidem ex aqua pura concretum, non tamen frigore ſed divini caloris vi.* Solinus who tranſcribed Plinie, and therefore in almoſt all ſubſcribed unto him, hath in this point diſſented from him. *Putant quidam glaciem coire, & in Cryſtallum corporari ſed fruſtra.* Mathiolus in his Comment upon Dioſcorides, hath with confidence and not without reaſon rejected it. The ſame hath been performed by Agricola *de Natura foßilium*; by Cardan, Bœtius *de Boot*, Cæſius Bernardus, Sennertus, and many more.

Now beſides authoritie againſt it, there may be many reaſons deduced from their ſeverall differences which ſeeme to overthrow it. And firſt, a difference is probable in their concretion. For if Cryſtall be a ſtone, (as in the number thereof it is confeſſedly received) it is not immediatly concreted by the efficacy of cold, but rather by a Minerall ſpirit, and lapidificall principles of its owne, and therefore while it lay *in ſolutis principiis*, and remained in a fluid body, it was a ſubject very unapt for proper conglaceation; for Minerall ſpirits, doe generally reſiſt and ſcarce ſubmit thereto. So wee obſerve that many waters and ſprings will never freez, and many parts in rivers and lakes, where there are Minerall eruptions, will ſtill perſiſt without congelation; as we alſo viſibly obſerve, in *Aqua fortis*, or any Minerall ſolution, either of Vitrioll, Alum, Salpeter, Ammoniac, or Tartar; which although to ſome degree exhaled and placed in cold conſervatories, will Cryſtalliſe and ſhoot into white and glacious bodyes; yet is not this a congelation primarily effected by cold, but an intrinſecall induration from themſelves, and a retreat into their proper ſolidityes, which were abſorbed by the licour, and loſt in a full imbibition thereof before. And ſo alſo when wood and many other bodies doe petrifie, either by the ſea, other waters, or earths abounding in ſuch ſpirits, doe wee uſually aſcribe their induration to cold, but rather unto ſalinous ſpirits, concretive juyces, and cauſes circumjacent, which doe aſſimilate all bodyes not indiſpoſed for their impreſſions.

But Ice is only water congealed by the frigidity of the ayre, whereby it acquireth no new forme, but rather a conſiſtence or determination of its diffluency, and amitteth not its eſſence, but its condition of fluidity; neither doth there any thing properly conglaciate but water, or watery humidity; for the determination of quick-ſilver is properly fixation, that of milke coagulation, and that of oyle and unctious bodies onely incraſſation; And therefore Ariſtotle makes a triall of the fertility of humane ſeed, from the experiment of congelation, for that ſayth hee, which is not watery and improlificall will not conglaciate, which perhaps muſt not be taken ſtrictly, but in the germe and ſpirited particles: for egges I obſerve will freeze, in the generative and albuginous part thereof. And upon this ground Paracelſus in his Archi-

doxis,

doxis, extracteth the magistery of wine, after foure moneths digestion in horsedunge, exposing it unto the extremity of cold, whereby the aqueous parts will freeze, but the Spirit retyre and be found uncongealed in the center.

Againe, the difference of their concretion is not without reason, collectible from their dissolution, which being many wayes performable in Ice, is not in the same manner effected in Crystall. Now the causes of liquation are contrary to those of concretion, and as the atoms and indivisible parcels are united, so are they in an opposite way disjoyned. That which is concreted by exsiccation or expression of humidity, wil be resolved by humectation, as earth, dirt, and clay; that which is coagulated by a fiery siccity, will suffer colliquation from an aqueous humidity, as salt and sugar, which are easily dissoluble in water, but not without difficulty in oyle, and well rectified spirits of wine. That which is concreated by cold, will dissolve by a moist heat, if it consist of watery parts, as Gums, Arabick, Tragacanth, Ammoniac, and others, in an ayrie heat or oyle, as all resinous bodies, Turpentine, Pitch, and Frankincense; in both as gummy resinous bodies, Masticke, Camphire, and Storax; in neither, as neutralls and bodies anomalous hereto, as Bdellium, Myrrhe and others. Some by a violent dry heat, as mettalls, which although corrodible by waters, yet will they not suffer a liquation from the powerfullest heat, communicable unto that element. Some will dissolve by this heat although their ingredients be earthy, as glasse, whose materialls are fine sand, and the ashes of Chali or Fearne; and so will salt runne with fire, although it bee concreated by heat, and this way alone may bee effected a liquation in Crystall, but not without some difficulty; that is, calcination or reducing it by Arte, into a subtile powder, by which way and a vitreous commixture, glasses are sometime made hereof, and it becomes the chiefest ground for artificiall and factitious gemmes; but the same way of solution is common also unto many stones, and not only Berylls and Cornelians, but flints and pebbles, are subject unto fusion, and will runne like glasse in fire.

But Ice will dissolve in any way of heat, for it will dissolve with fire, it will colliquate in water, or warme oyle; nor doth it only submit to an actuall heat, but not endure the potentiall calidity of many waters; for it will presently dissolve in *Aqua fortis*, sp. of vitrioll, salt or tartar, nor will it long continue its fixation in spirits of wine, as may be observed in Ice injected therein.

Againe, the concretion of Ice will not endure a dry attrition without liquation; for if it be rubbed long with a cloth it melteth, but Crystall will calefy unto electricity, that is a power to attract strawes or light bodies, and convert the needle freely placed; which is a declarement of very different parts, wherein wee shall not at present

inlarge, as having diſcourſed at full concerning ſuch bodies in the Chap. of Electricks.

They are differenced by ſupernatation or floating upon water, for Chryſtall will ſinke in water as carrying in its owne bulke a greater ponderoſity, then the ſpace in any water it doth occupy, and will therefore only ſwim in molten mettall, and Quickſilver. But Ice will ſwim in water of what thinneſſe ſoever; and though it ſinke in oyle, will float in ſpirits of wine or *Aqua vitæ*. And therefore it may ſwim in water, not only as being water it ſelfe, and in its proper place, but perhaps as weighing no more then the water it poſſeſſeth. And therefore as it will not ſinke unto the bottome, ſo will it neither float above like lighter bodies, but being neare, or inequality of weight, lye ſuperficially or almoſt horizontally unto it. And therefore alſo an Ice or congelation of ſalt or ſugar, although it deſcend not unto the bottome, yet will it abate, and decline below the ſurface in thin water, but very ſenſibly in ſpirits of wine. For Ice although it ſeemeth as tranſparent and compact as Chryſtall, yet is it ſhort in either, for its atoms are not concreted into continuity, which doth diminiſh its tranſlucency; it is alſo full of ſpumes and bubbles, which may abate its gravity. And therefore waters frozen in pans, and open glaſſes, after their diſſolution do commonly leave a froth, and ſpume upon them.

They are diſtinguiſht into ſubſtance of parts and the accidents thereof, that is in colour and figure; for Ice is a ſimilary body, and homogeneous concretion, whoſe materiall is properly water, and but accidentally exceeding the ſimplicity of that element; but the body of Cryſtall is mixed, its ingredients many, and ſenſibly containeth thoſe principles into which mixt bodies are reduced; for beſide the ſpirit and mercuriall principle, it containeth a ſulphur or inflamable part, and that in no ſmall quantity; for upon colliſion with ſteele, it will actually ſend forth its ſparkes not much inferior unto a flint. Now ſuch bodies only ſtrike fire as have a ſulphur or ignitible parts within them. For as we elſewhere declare, theſe ſcintillations are not the accenſion of the ayre, upon the colliſion of two hard bodies, but rather the inflamable effluencies diſcharged from the bodies collided. For diamonds, marbles, heliotropes, and agaths, though hard bodies, will not ſtrike fire, nor one ſteele eaſily with another, nor a flint eaſily with a ſteele, if they both be wet, for then the ſparkes are quenched in their eruption.

It containeth alſo a ſalt, and that in ſome plenty which may occaſion its fragility, as is alſo obſervable in corall. This by the art of Chymiſtry is ſeparable unto the operations whereof it is lyable, with other concretions, as calcination, reverberation, ſublimation, diſtillation: And in the preparation of Cryſtall, Paracelſus hath made a rule for that of Gemms, as he declareth in his firſt *de præparationibus*. Briefly, it conſiſteth of ſuch parts ſo far from an Icie diſſolution that powerfull

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menſtruums are made for its emolition, whereby it may receive the tincture of minerals, and ſo reſemble Gemms, as Boetius hath declared in the diſtillation of Urine, ſpirits of wine, and turpentine, and is not onely triturable, and reduceable into powder, by contrition, but will ſubſiſt in a violent fire, and endure a vitrification: Wherby are teſtified its earthy and fixed parts. For vitrification is the laſt worke of fire, and when that arriveth, humidity is exhaled, for powdered glaſſe emits no fume or exhalation although it bee laid upon a red hot iron. And therefore when ſome commend the powder of burnt glaſſe againſt the ſtone, they fall not under my comprehenſion, who cannot conceive how a body ſhould be farther burned, which hath already paſſed the extreameſt teſte of fire.

As for colour although cryſtall in his pellucide body ſeems to have none at all, yet in its reduction into powder, it hath a vaile and ſhadow of blew, and in its courſer peeces, is of a ſadder hue, then the powder of Venice glaſſe, which complexion it will maintaine although it long endure the fire; which notwithſtanding needs not move us unto wonder, for vitrified and pellucide bodyes, are of a clearer complexion in their continuities, then in their powders and Atomicall diviſions. So *Stibium* or glaſſe of Antimony, appears ſomewhat red in glaſſe, but in its powder yellow; ſo painted glaſſe of a ſanguine red will not aſcend in powder above a murrey.

As for the figure of cryſtall (which is very ſtrange, and forced Plinie to the deſpaire of reſolution) it is for the moſt part hexagonall or ſix cornerd, being built upon a confuſed matter from whence as it were from a root angular figures ariſe, as in the Amethiſts and Baſaltes, which regular figuration hath made ſome opinion, it hath not its determination from circumſcription or as conforming unto contiguities, but rather from a ſeminall root, and formative principle of its owne, even as we obſerve in ſeverall other concretions. So the ſtones which are ſometime found in the gall of a man, are moſt triangular, and pyramidall, although the figure of that part ſeems not to cooperate thereto. So the *Aſteria* or *Lapis Stellaris*, hath on it the figure of a Starre, and ſo *Lapis Iudaicus*, that famous remedy for the ſtone, hath circular lines in length all downe its body, and equidiſtant, as though they had been turned by Art. So that we call a Fayrie ſtone, and is often found in gravell pits amongſt us, being of an hemiſpherical figure, hath five double lines ariſing from the center of its baſis, which if no accretion diſtract them doe commonly concur and meet in the pole thereof. The figures are regular in many other ſtones, as in the Belemnites, *Lapis anguinus*, *Cornu Ammonis*, and divers beſide, as by thoſe which have not the experience hereof may be obſerved in their figures expreſſed by Mineralogiſtes. But Ice receiveth its figure according unto the ſurface, wherein it concreteth or the circumambiency which conformeth

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it. So is it plaine upon the ſurface of water, but round in hayle, (which is alſo a glaciacion) and figured in its guttulous deſcent from the ayre. And therefore Ariſtotle in his Meteors concludeth that haile which is not round is congealed nearer the earth, for that which falleth from an high, is by the length of its journey corraded, and deſcendeth therefore in a leſſer magnitude, but greater rotundity unto us.

They are alſo differenced in the places of their generation; for though Cryſtall be found in cold countries, and where Ice remaineth long, and the ayre exceedeth in cold, yet is it alſo found in regions, where Ice is ſeldome ſeen or ſoon diſſolved, as Plinie and Agricola relate of Cyprus, Caramania and an Iſland in the Red-ſea; it is alſo found in the veynes of Mineralls, in rocks, and ſometime in common earth. But as for Ice it will not concrete but in the approachment of the ayre, as we have made tryall in glaſſes of water, covered halfe an inche with oyle, which will not eaſily freeze in the hardeſt froſts of our climate; for water concreteth firſt in its ſurface, and ſo conglaciates downward, and ſo will it doe although it be expoſed in the coldeſt mettall of lead; which well accordeth with that expreſſion of God, Job 38. The waters are hid as with a ſtone, and the face of the deep is frozen.

They have contrary qualities elementall, and uſes medicinall; for Ice is cold and moyſt, of the quality of water: But Cryſtall is cold and dry, according to the condition of earth, the uſe of Ice is condemned by moſt Phyſitians; that of Chryſtall commended by many. For although Dioſcorides and Galen, have left no mention thereof; yet hath Mathiolus, Agricola, and many other commended it in diſenteries and fluxes; all for the encreaſe of milke, moſt Chymiſtes for the ſtone, and ſome as Braſſavolus and Boetius, as an antidote againſt poyſon: Which occult and ſpecificall operations, are not expectible from Ice; for being but water congealed, it can never make good ſuch qualities, nor will it reaſonably admit of ſecret proprieties, which are the affections of formes, and compoſitions at diſtance from their elements.

Having thus declared what Chryſtall is not, it may afford ſome ſatisfaction to manifeſt what it is. To deliver therefore what with the judgement of approved Authors, and beſt reaſon conſiſteth, It is a minerall body in the difference of ſtones, and reduced by ſome unto that ſubdiviſion, which comprehendeth gemmes; tranſparent and reſembling glaſſe or Ice, made of a lentous colament of earth, drawne from the moſt pure and limpid juyce thereof, owing unto the coldneſſe of the earth ſome concurrence or coadjuvancy, but not its immediate determination and efficiency, which are wrought by the hand of its concretive ſpirit, the ſeeds of petrification and Gorgon within it ſelfe; as we may conceive in ſtones and gems, as Diamonds, Beryls, Saphires and the like, whoſe generation we cannot with ſatisfaction confine unto the remote activity of the Sun, or the common operation of cold-

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neſſe in the earth, but may more ſafely referre it unto a lapidificall ſuccity, and congelitive principle which determines prepared materials unto ſpecificall concretions. And therefore I feare we commonly conſider ſubterranities not in contemplations ſufficiently reſpective unto the creation. For though Moſes have left no mention of minerals, nor made any other deſcription then ſutes unto the apparent and viſible creation; yet is there unqueſtionably, a very large Claſſis of creatures in the earth farre above the condition of elementarity: And although not in a diſtinct and indiſputable way of vivency, or anſwering in all points the properties or affections of plants, yet in inferiour and deſcending conſtitutions, they do like theſe containe ſpecificall diſtinctions, and are determined by ſeminalities; that is created, and defined ſeeds committed unto the earth from the beginning. Wherein although they attaine not the indubitable requiſites of Animation, yet have they a neere affinity thereto. And though we want a proper name and expreſſive appellation, yet are they not to be cloſed up in the generall name of concretions, or lightly paſſed over as onely Elementary, and Subterraneous mixtions.

The principle and moſt gemmary affection is its Tralucency; as for irradiancy or ſparkling, which is found in many gems it is not diſcoverable in this, for it commeth ſhort of their compactneſſe and durity: and therefore it requireth not the Emery, as Diamonds or Topaze, but will receive impreſſion from ſteele, more eaſily then the Turchois. As for its diaphanity or perſpicuity, it enjoyeth that moſt eminently, and the reaſon thereof is its continuity, as having its earthly & ſalinous parts ſo exactly reſolved, that its body is left imporous and not diſcreted by atomicall terminations. For, that continuity of parts, is the cauſe of perſpicuity, is made perſpicuous by two wayes of experiment, that is either in effecting tranſparency in thoſe bodyes which were not ſo before, or at leaſt far ſhort of the additionall degree. So ſnow becomes tranſparent upon liquation, ſo hornes and bodyes reſolveable into continued parts or gelly. The like is obſervable in oyled paper, wherein the interſtitial diviſions being continuated by the acceſſion of oyle, it becommeth more tranſparent, and admits the viſible rayes with leſſe umbroſity. Or elſe by rendring thoſe bodies opacus which were before pellucide and perſpicuous. So glaſſe which was before diaphanous, being by powder reduced into multiplicity of ſuperficies, becomes an opacus body, and will not tranſmit the light: and ſo it is in cryſtall powdered, and ſo it is alſo evident before; for if it be made hot in a cruſible, and preſently projected upon water, it will grow dim, and abate its diaphanity, for the water entring, the body begets a diviſion of parts; and a termination of Atoms united before unto continuity.

The ground of this opinion might be, firſt the concluſions of ſome men

men from experience, for as much as Cryſtall is found ſometimes in rockes, and in ſome places not much unlike the ſtirious or ſtillicidious dependencies of Ice; which notwithſtanding may happen either in places which havee been forſaken or left bare by the earth, or may be petrifications, or Minerall indurations, like other gemmes proceeding from percolations of the earth diſpoſed unto ſuch concretions.

The ſecond and moſt common ground is from the name *Cryſtallus*, whereby in Greeke, both Ice and Cryſtall are expreſſed, which many not duly conſidering, have from their community of name, conceived a community of nature, and what was aſcribed unto the one, not unfitly appliable unto the other. But this is a fallacy of Æquivocation, from a ſociety in name inferring an Identity in nature. By this fallacy was he deceived that drank *Aqua fortis* for ſtrong water: By this are they deluded, who conceive *ſperma Cæti* (which is a bituminous ſuperfluitance on the Sea) to be the ſpawne of the Whale; Or take *ſanguis draconis*, (which is the gumme of a tree) to be the blood of a Dragon. By the ſame Logick we may inferre, the Cryſtalline humor of the eye, or rather the Cryſtalline heaven above, to be of the ſubſtance of Cryſtall below; Or that Almighty God ſendeth downe Cryſtall, becauſe it is delivered in the vulgar tranſlation, Pſal. 47. *Mittit Cryſtallum ſuum ſicut Buccellas:* which tranſlation although it literally expreſſe the Septuagint, yet is there no more meant thereby, then what our tranſlation in plaine Engliſh expreſſeth; that is, hee caſteth forth his Ice like morſels, or what Tremellius and Junius as clearly deliver, *Dejicit gelu ſuum ſicut fruſta coram frigore eius quis conſiſtet?* which proper and Latine expreſſions, had they been obſerved in ancient tranſlations, elder Expoſiters had not beene miſguided by the Synonomy, nor had they afforded occaſion unto Auſten, the Gloſſe, Lyranus, and many others, to have taken up the common conceit, and ſpoke of this text conformably unto the opinion rejected.

Chap. II.

Concerning the Loadſtone.

Of things particularly ſpoken thereof evidently or probably true. Of things generally beleeved, or particularly delivered, manifeſtly or probably falſe. In the firſt of the Magneticall vertue of the earth, of the foure motions of the ſtone, that is, its Verticity or direction, its Attraction or Coition, its declination, its Variation, and alſo of its Antiquity. In the ſecond a rejection of ſundry opinions and relations thereof, Naturall, Medicall, Hiſtoricall, Magicall.

And firſt we conceive the earth to be a Magneticall body. A Magnetical body, we term not only that which hath a power attractive, but that which ſeated in a convenient medium naturally diſpoſeth it ſelf

ſelf to one invariable and fixed ſituation. And ſuch a Magnetical vertue we conceive to be in the Globe of the earth; whereby as unto its naturall points and proper terms it diſpoſeth it ſelf unto the poles, being ſo framed, conſtituted & ordered unto theſe points, that thoſe parts which are now at the poles, would not naturally abide under the Æquator, nor Green-land remain in the place of Magellanica; and if the whole earth were violently removed, yet would it not forgoe its primitive points, nor pitch in the Eaſt or Weſt, but return unto its polary poſition again. For though by compactneſſe or gravity it may acquire the loweſt place, and become the center of the univerſe, yet that it makes good that point, not varying at all by the acceſſion of bodyes upon, or receſſion thereof, from its ſurface perturbing the equilibration of either Hemiſpheare (whereby the altitude of the ſtarres might vary) or that it ſtrictly maintaines the north and ſoutherne points, that neither upon the motions of the heavens, ayre and winds without, large eruptions and diviſion of parts within, its polar parts ſhould never incline or veere unto the Æquator (whereby the latitude of places ſhould alſo vary) it cannot ſo well be ſalved from gravity as a magneticall verticity. This is probably that foundation the wiſdome of the Creator hath laid unto the earth, and in this ſenſe we may more nearly apprehend, and ſenſibly make out the expreſſions of holy Scripture, as that of Pſ. 93. 1. *Firmavit orbem terræ qui non commovebitur*, he hath made the round world ſo ſure that it cannot be moved: as when it is ſaid by Job, *Extendit Aquilonem ſuper vacuo, &c.* Hee ſtretcheth forth the North upon the empty place, and hangeth the earth upon nothing. And this is the moſt probable anſwer unto that great queſtion, Job 38. whereupon are the foundations of the earth faſtened, or who laid the corner ſtone thereof? Had they been acquainted with this principle, Anaxagoras, Socrates and Democritus had better made out the ground of this ſtability: Xenophanes had not been faine to ſay it had no bottome, and Thales Mileſius to make it ſwim in water. Now whether the earth ſtand ſtill, or moveth circularly, we may concede this Magneticall ſtability: For although it move, in that converſion the poles and center may ſtill remaine the ſame, as is conceived in the Magneticall bodies of heaven, eſpecially Jupiter and the Sunne; which according to Galileus, Kepler, and Fabricius, are obſerved to have Dineticall motions and certaine revolutions about their proper centers; and though the one in about the ſpace of ten dayes, the other in leſſe then one, accompliſh this revolution, yet do they obſerve a conſtant habitude unto their poles and firme themſelves thereon in their gyration.

Nor is the vigour of this great body included only in is ſelfe, or circumferenced by its ſurface, but diffuſed at indeterminate diſtances through the ayre, water and bodyes circumjacent; exciting and impregnating magneticall bodyes within it ſurface or without it, and per-

forming in a ſecret and inviſible way what we evidently behold effected by the Loadſtone. For theſe effluxions penetrate all bodyes, and like the ſpecies of viſible objects are ever ready in the medium, and lay hold on all bodyes proportionate or capable of their action; thoſe bodyes likewiſe being of a congenerous nature doe readily receive the impreſſions of their motor; and if not fettered by their gravity, conforme themſelves to ſituations, wherein they beſt unite unto their Animator. And this will ſufficiently appeare from the obſervations that are to follow, which can no better way bee made out then this wee ſpeake of the magneticall vigour of the earth. Now whether theſe effluviums do flye by ſtreated Atomes and winding particles as *Renatus des Cartes* conceaveth, or glide by ſtreames attracted from either pole and hemiſpheare of the earth unto the Æquator, as Sir Kenelme Digby excellently declareth, it takes not away this vertue of the earth, but more diſtinctly ſets downe the geſts and progreſſe thereof, and are conceits of eminent uſe to ſalve magneticall phenomena's. And as in Aſtronomy thoſe hypotheſes though never ſo ſtrange are beſt eſteemed which beſt do ſalve apparencies, ſo ſurely in Philoſophy thoſe principles (though ſeeming monſtrous) may with advantage be embraced, which beſt confirme experiment, and afford the readieſt reaſon of obſervation. And truly the doctrine of effluxions, their penetrating natures, their inviſible paths, and inſuſpected effects, are very conſiderable; for beſides this magneticall one of the earth, ſeverall effuſions there may be from divers other bodies, which inviſibly act their parts at any time, and perhaps through any medium, a part of Philoſophy but yet in diſcovery, and will I feare prove the laſt leafe to be turned over in the booke of Nature.

Firſt, therefore it is evidently true and confirmable by every experiment, that ſteele and good Iron never excited by the Loadſtone, diſcover in themſelves a verticity; that is, a directive or polary faculty, whereby conveniently they do ſeptentrionate at one extreme, and Auſtralize at another; & this is manifeſtible in long and thin plates of ſteel perforated in the middle and equilibrated, or by an eaſier way in long wires equiponderate with untwiſted ſilke and ſoft wax; for in this manner pendulous they will conforme themſelves Meridionally, directing one extreame unto the North, another to the South. The ſame is alſo manifeſt in ſteele wires thruſt through little ſpheres or globes of Corke and floated on the water, or in naked needles gently let fall thereon, for ſo diſpoſed they will not reſt untill they have found out the Meridian, and as neere as they can lye parallell unto the axis of the earth: Sometimes the eye, ſometimes the point Northward in divers Needles, but the ſame point alwayes in moſt, conforming themſelves unto the whole earth, in the ſame manner as they doe unto every Loadſtone; For if a needle untoucht be hanged above a Loadſtone; it will

will convert into a parallel position thereto; for in this situation it can best receive its verticity and be excited proportionably at both extremes: now this direction proceeds not primitively from themselves, but is derivative and contracted from the magneticall effluxions of the earth, which they have winded in their hammering and formation, or else by long continuance in one position, as wee shall declare hereafter.

It is likewise true what is delivered of Irons heated in the fire, that they contract a verticity in their refrigeration; for heated red hot and cooled in the meridian from North to South, they presently contract a polary power, and being poysed in ayre or water convert that part unto the North which respected that point in its refrigeration; so that if they had no sensible verticity before it may be acquired by this way, or if they had any, it might be exchanged by contrary position in the cooling: for by the fire they omit not onely many drossie and scorious parts, but whatsoever they had received either from the earth or loadstone, and so being naked and despoiled of all verticity, the magneticall Atomes invade their bodies with more effect and agility.

Neither is it onely true what Gilbertus first observed, that Irons refrigerated North and South acquire a Directive faculty, but if they be cooled upright and perpendicularly they will also obtaine the same; that part which is cooled toward the North on this side the Æquator, converting it selfe unto the North, and attracting the South point of the Needle: the other and highest extreme respecting the South, and attracting the Northerne according unto the Laws Magneticall: for (what must be observed) contrary poles or faces attract each other, as the North the South, and the like decline each other, as the North the North. Now on this side of the Æquator, that extreme which is next the earth is animated unto the North, and the contrary unto the South; so that in Coition it applyes it selfe quite oppositely, the coition or attraction being contrary to the verticity or Direction. Contrary if wee speake according unto common use, yet alike if we conceave the virtue of the North pole to diffuse it self and open at the South, and the South at the North againe.

This polarity Iron refrigeration upon extremity and in defect of a Loadstone might serve to invigorate and touch a needle any where; and this, allowing variation, is also the truest way at any season to discover the North or South; and surely farre more certaine then what is affirmed of the graines and circles in trees, or the figure in the roote of Ferne. For if we erect a red hot wire untill it coole, then hang it up with wax and untwisted silke, where the lower end and that which cooled next the earth doth rest, that is the Northerne point; and this we affirme will still be true, whether it be cooled in the ayre or extinguished in water, oyle of vitrioll, Aqua fortis, or Quicksilver. And this

is alſo evidenced in culinary utenſils and Irons that often feele the force of fire, as tongs, fireſhovels, prongs and Andirons; all which acquire a magneticall and polary condition, and being ſuſpended, convert their lower extremes unto the North, with the ſame attracting the Southerne point of the Needle. For eaſier experiment if wee place a Needle touched at the foote of tongues or andirons, it will obvert or turne aſide its lyllie or North point, and conforme its cuſpis or South extreme unto the andiron. The like verticity though more obſcurely is alſo contracted by brickes and tiles, as wee have made triall in ſome taken out of the backs of chimneys. Now to contract this Direction, there needs not a totall ignition, nor is it neceſſary the Irons ſhould bee red hot all over. For if a wire be heated onely at one end, according as that end is cooled upward or downeward, it reſpectively acquires a verticity, as we have declared before in wires totally candent. Nor is it abſolutely requiſite they ſhould be exactly cooled perpendicularly, or ſtrictly lye in the meridian, for whether they be refrigerated inclinatorily or ſomewhat Æquinoxially, that is toward the Eaſterne or Weſterne points though in a leſſer degree, they diſcover ſome verticity.

Nor is this onely true in Irons but in the Loadſtone it ſelfe; for if a Loadſtone be made red hot in the fire it amits the magneticall vigour it had before in it ſelfe, and acquires another from the earth in its refrigeration; for that part which cooleth toward the earth will acquire the reſpect of the North, and attract the Southerne point or cuſpis of the Needle. The experiment hereof we made in a Loadſtone of a parallellogram or long ſquare figure, wherein only inverting the extremes as it came out of the fire, wee altered the poles or faces thereof at pleaſure.

It is alſo true what is delivered of the Direction and coition of Irons that they contract a verticity by long and continued poſition; that is, not onely being placed from North to South, and lying in the meridian, but reſpecting the Zenith and perpendicular unto the center of the earth, as is moſt manifeſt in barres of windowes, caſements, hindges and the like; for if we preſent the Needle unto their lower extremes, it wheeles about it and turnes its Southerne point unto them. The ſame condition in long time doe bricks contract which are placed in walls, and therefore it may be a fallible way to finde out the meridian by placing the Needle on a wall for ſome bricks therein which by a long and continued poſition, are often magnetically enabled to diſtract the polarity of the Needle.

Laſtly, Irons doe manifeſt a verticity not only upon refrigeration and conſtant ſituation, but (what is wonderfull and advanceth the magneticall hypotheſis) they evidence the ſame by meer poſition according as they are inverted, and their extreams diſpoſed reſpectively unto the earth. For if an iron or ſteele not formerly excited, be held perpendicularly

pendicularly or inclinatorily unto the needle, the lower end thereof will attract the *cuspis* or southerne point; but if the same extream be inverted and held under the needle, it will then attract the lilly or northerne point; for by inversion it changeth its direction acquired before, and receiveth a new and southerne polarity from the earth as being the upper extreame. Now if an iron be touched before, it varyeth not in this manner, for then it admits not this magneticall impression, as being already informed by the Loadstone and polarily determined by its preaction.

And from these grounds may we best determine why the Northern pole of the Loadstone attracteth a greater weight then the Southerne on this side the Equator, why the stone is best preserved in a naturall and polary situation; and why as Gilbertus observeth, it respecteth that pole out of the earth which it regarded in its minereall bed and subterraneous position.

It is likewise true and wonderfull what is delivered of the Inclination or Declination of the Loadstone; that is, the descent of the needle below the plaine of the Horizon: for long needles which stood before upon their *axis parallell* unto the Horizon, being vigorously excited, incline and bend downeward, depressing the North extreame below the Horizon; that is the North on this, the South on the other side of the Equator, and at the very Lyne or middle circle of the Earth stand parallell, and deflecteth neither. And this is evidenced not only from observations of the needle in severall parts of the earth, but sundry experiments in any part thereof, as in a long steele, wires equilibrated or evenly ballanced in the ayre; for excited by a vigorous Loadstone it will somewhat depresse its animated extreme, and intersect the horizontall circumference. It is also manifest in a needle pierced through a globe of Cork so cut away and pared by degrees that it will swim under water, yet sinke not unto the bottome, which may be well effected; for if the corke bee a thought too light to sinke under the surface, the body of the water may be attenuated with spirits of wine; if too heavy, it may be incrassated with salt; and if by chance too much be added, it may againe be thinned by a proportionable addition of fresh water: if then the needle be taken out, actively touched and put in againe, it will depresse and bow down its northerne head toward the bottome, and advance its southerne extremity toward the brim. This way invented by Gilbertus may seem of difficulty; the same with lesse labour may be observed in a needled sphere of corke equally contiguous unto the surface of the water; for if the needle be not exactly equiponderant, that end which is a thought too light, if touched becommeth even; that needle also which will but just swim under water if forcibly touched will sinke deeper, and sometime unto the bottome. If likewise that inclinatory vertue be destroy-

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ed by a touch from the contrary pole, that end which before was elevated will then decline; & this perhaps might be obſerved in ſome ſcales exactly ballanced, and in ſuch needles which for their bulke can hardly be ſupported by the water. For if they be powerfully excited & equally let fall, they commonly ſink down and break the water at that extream wherat they were ſeptentrionally excited, & by this way it is conceived there may be ſome fraud in the weighing of precious commodities, and ſuch as carry a value in quarter grains, by placing a powerfull Loadſtone above or below, according as we intend to depres or elevate one extrem.

Now if theſe magneticall emiſſions bee only qualities, and the gravity of bodyes incline them only unto the earth; ſurely that which moveth other bodyes to deſcent carryeth not the ſtroak in this, but rather the magneticall alliciency of the earth, unto which alacrity it applyeth it ſelfe, and in the very ſame way unto the whole earth, as it doth unto a ſingle Loadſtone: for if an untouched needle be at a diſtance ſuſpended over a Loadſtone, it will not hang parallel, but decline at the north extreme, and at that part will firſt ſalute its Director. Again, what is alſo wonderfull, this inclination is not invariable; for as it is obſerved juſt under the line the needle lyeth parallel with the Horizon, but ſayling north or ſouth it beginneth to incline, and increaſeth according as it approacheth unto either pole, and would at laſt endeavour to erect it ſelfe; and this is no more then what it doth upon the Loadſtone, and that more plainly upon the Terrella or ſphericall magnet geographically ſet out with circles of the Globe. For at the Æquator thereof the needle will ſtand rectangularly, but approaching northward toward the tropick it will regard the ſtone obliquely; & when it attaineth the pole directly, and if its bulk be no impediment, erect it ſelf and ſtand perpendicularly thereon. And therefore upon ſtrict obſervation of this inclination in ſeverall latitudes & due records preſerved, inſtruments are made whereby without the help of Sun or Star, the latitude of the place may be diſcovered; and yet it appears the obſervations of men have not as yet been ſo juſt & equall as is deſirable, for of thoſe tables of declination which I have peruſed, there are not any two that punctually agree, though ſom have been thoght exactly calculated, eſpecially that which *Ridley* received frõ Mr. *Brigs* in our time Geometry Profeſſor in *Oxford*.

It is alſo probable what is delivered concerning the variation of the compaſſe that is the cauſe and ground thereof, for the manner as being confirmed by obſervation we ſhall not at all diſpute. The variation of the compaſſe is an Arch of the Horizon intercepted between the true and magneticall meridian, or more plainly, a deflexion and ſiding Eaſt and Weſt from the true meridian. The true meridian is a major circle paſſing through the poles of the world, and the Zenith or Vertex of any place, exactly dividing the Eaſt from the Weſt. Now on this lyne the needle exactly lyeth not, but diverts and varieth its point, that is

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the North point on this ſide the Æquator, the South on the other, ſomtimes unto the Eaſt, ſometime toward the Weſt, and in ſome few places varieth not at all. Firſt, therfore it is obſerved that betwixt the ſhore of Ireland, France, Spaine, Guinie and the Azores, the North point varieth toward the Eaſt, and that in ſome variety; at London it varieth eleven degrees, at Antwerpe nine, at Rome but five, at ſome parts of the Azores it declineth not, but lyeth in the true meridian on the other ſide of the Azores; and this ſide the Equator the north point of the needle wheeleth to the Weſt, ſo that in the latitude of 36. neare the ſhore, the variation is about eleven degrees; but on the other ſide the Equator, it is quite otherwiſe: for about Capo Frio in Braſilia, the ſouth point varieth twelve degrees unto the Weſt, and about the mouth of the Straites of Magellan five or ſix; but elongating from the coaſt of Braſilia toward the ſhore of Africa it varyeth Eaſtward, and ariving at Capo de las Agullas, it reſteth in the Meridian, and looketh neither way.

Now the cauſe of this variation may be the inequalitie of the earth, variouſly diſpoſed, and differently intermixed with the Sea: withall the different diſpoſure of its magneticall vigor in the eminencies and ſtronger parts thereof; for the needle naturally endeavours to conforme unto the Meridian, but being diſtracted driveth that way where the greater & moſt powerfuller part of the earth is placed, which may be illuſtrated from what hath been delivered before, and may be conceived by any that underſtands the generalities of Geographie. For whereas on this ſide the Meridian, or the Iſles of Azores, where the firſt Meridian is placed, the needle varieth Eaſtward, it may bee occaſioned by that vaſt Tract of earth, that is, Europe, Aſia, and Africa, ſeated toward the Eaſt, and diſpoſing the needle that way: For arriving at ſome part of the Azores, or Iſlands of Saint Michaels, which have a middle ſituation betweene theſe continents, and that vaſt and almoſt anſwerable Tract of America, it ſeemeth equally diſtracted by both, and diverting unto neither, doth parallell and place it ſelf upon the true Meridian. But ſayling farther it *veers* its Lilly to the Weſt, and regardeth that quarter wherein the land is nearer or greater; and in the ſame latitude as it approacheth the ſhoare augmenteth its variation. And therefore as ſome obſerve, if Columbus or whoſoever firſt diſcoved America, had apprehended the cauſe of this variation, having paſſed more then halfe the way, he might have been confirmed in the diſcovery, and aſſuredly foretold there lay a vaſt and mighty continent toward the Weſt. The reaſon I confeſſe, and inference is good, but the inſtance perhaps not ſo. For Columbus knew not the variation of the compaſſe, whereof Sebaſtian Cabot firſt took notice, who after made diſcovery in the Northern parts of that continent. And it happened indeed that part of America was firſt diſcovered, which was on this

thi side farthest distant, that is Jamaica, Cuba, and the Isles in the Bay of Mexico. And from this variation do some new discoverers deduce a probability in the attempts of the Northerne passage toward the Indies.

Now because where the greater continents are joyned, the action and effluence is also greater, therefore those needles do suffer the greatest variation which are in Countreys which most do feel that Action. And therefore hath Rome far lesse variation then London; for on the West side of Rome, are seated the great continents of France, Spaine, Germany, which take of the exuperance and in some way ballance the vigour of the Estern parts; but unto England there is almost no earth West, but the whole extent of Europe and Asia, lyeth Eastward and therfore at London it varieth eleven dgerees, that is almost one *Rhomb.* Thus also by reason of the great continent of Brasilia, Peru, and Chili, the needle deflecteth toward the land twelve degrees; but at the straits of Magellan where the land is narrowed, and the Sea on the other side, it varyeth but five or six. And so likewise, because the Cape *de las Agullas* hath Sea on both sides near it, and other land remote and as it were æquidistant from it, therefore at that point the needle conforms unto the true Meridian, and is not distract by the vicinity of Adjacencyes. And this is the generall and great cause of variation. But if in certaine creekes and valleys the needle prove irregular, and vary beyond expectance, it may be imputed unto some vigorous part of the earth, or Magneticall eminence not far distant. And this was the invention of Dr Gilbert not many yeeres past, a Physition in London. And therefore although some assume the invention of its direction, and others have had the glory of the Carde, yet in the experiments, grounds, and causes thereof, England produced the Father Philosopher, and discovered more in it, then Columbus or Americus did ever by it.

It is also probable what is conceived of its Antiquity, that the knowledge of its polary power and direction unto the North was unknowne unto the Ancients, and though Levinus Lemnius, and Cælius Calcagninus, are of another beliefe, is justly placed with new inventions by Pancirollus; for their Achilles and strongest argument is an expression in Plautus, a very ancient Author, and contemporary unto Ennius. *Hic ventus jam secundus est cape modo versoriam* Now this *versoriam* they construe to be the compasse, which notwithstanding according unto Pineda, who hath discussed the point, Turnebus, Cabeus, & divers others, is better interpreted the rope that helps to turne the ship; or as we say, doth make it tack about; the Compasse, declaring rather the ship is turned, then conferring unto its conversion. As for the long expeditions & sundry voiages of elder times, which might confirm the antiquity of this invention, it is not improbable they were performed

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by the helpe of ſtarres; and ſo might the Phænicean navigators, and alſo Vlyſſes ſaile about the Mediterranean, by the flight of birds, or keeping near the ſhore, and ſo might Hanno coaſt about Africa, or by the helpe of oares as is expreſſed in the voyage of Jonah. And whereas it is contended that this verticity was not unknowne unto Salomon; in whom is preſumed a univerſality of knowledge, it will as forcibly follow he knew the Arte of Typography, powder and gunnes, or had the Philoſophers ſtone, yet ſent unto Ophir for gold. It is not to be denyed, that beſide his politicall wiſdome; his knowledge in Philoſophie was very large, and perhaps from his workes therein, the ancient Philoſophers eſpecially Ariſtotle, who had the aſſiſtance of Alexanders acquirements, collected great obſervables, yet if he knew the uſe of the Compaſſe, his ſhips were ſurely very ſlow, that made a three yeares voyage from Eziongeber in the red Sea unto Ophir, which is ſuppoſed to be Taprobana or Malaca in the Indies, not many moneths ſayle, and ſince in the ſame or leſſer time, Drake and Candiſh performed their voyage about the earth.

And as the knowledge of its verticity is not ſo old as ſome conceive, ſo is it more ancient then moſt beleeve; nor had its diſcovery with gunnes, printing, or as many thinke, ſome yeers before the diſcovery of America; for it was not unknowne unto Petrus Peregrinus a French man, who two hundred yeeres ſince hath left a Tract of the Magnet & a perpetual motion to be made thereby preſerved by Gaſſerus. Paulus Venetus and about five hundred yeers paſt, Albertus Magnus, make mention hereof, and quoteth for it a book of Ariſtotle *de lapide*, which book although we find in the Catalogue of Laertius, yet with Cabeus I rather judge it to be the work of ſome Arabick writer, not many years before the dayes of Albertus.

Laſtly, It is likewiſe true what ſome have delivered of *Crocus martis*, that is, ſteele corroded with vineger, ſulphur, or otherwiſe, and after reverberated by fire. For the Loadſtone will not at all attract it, nor will it adhere, but lye therein like ſand. This is to be underſtood of *Crocus martis* well reverberated, and into a violet colour: for common chalybs *præparatus*, or corroded and powdered ſteele, the Loadſtone attracts like ordinary filings of iron, and many times moſt of that which paſſeth for *Crocus martis*. So that this way may ſerve as a teſt of its preparation, after which it becommeth a very good medicine in fluxes. The like may be affirmed of Flakes of iron that are ruſty and begin to tend unto earth; for their cognation then expireth, and the Loadſtone will not regard them.

Chap. III.

Concerning the Loadstone, therein of sundry common opinions, and received relations, Naturall, Historicall, Medicall, Magicall.

And first not onely a simple Hetorodox, but a very hard Parodox, it will seeme, and of great absurdity unto obstinate eares, if wee say attraction is unjustly appropriated unto the Loadstone, and that perhaps we speake not properly, when wee say vulgarly the Loadstone draweth Iron, and yet herein we should not want experiment and great authority. The words of Renatus *des Cartes* in his principles of Philosophy are very plain. *Præterea magnes trahet ferrum, sive potius magnes & ferrum ad invicem accedunt, neque enim ulla ibi tractio est*; The same is solemnly determined by Cabius. *Nec magnes trahit proprie ferrum, nec ferrum ad se magnetem provocat, sed ambo pari conatu ad invicem confluunt.* Concordant hereto is the assertion of Doctor Ridley, Physition unto the Emperour of Russia in his Tract of Magnetical bodies; defining Magneticall attraction to be a naturall incitation and disposition conforming unto contiguitie, an union of one Magneticall body with an other, and no violent haling of the weak unto the stronger. And this is also the doctrine of Gilbertus, by whom this motion is termed coition, and that not made by any faculty attractive of one, but a Syndrome and concourse of each; a coition alway of their vigours, and also of their bodies, if bulke or impediment prevent not, and therefore those contrary actions which flow from opposite poles or faces, are not so properly expulsion and attraction, as Sequela and Fuga a mutuall flight and following.

The same is also confirmed by experiment; for if a piece of iron be fastened in the side of a bowle or bason of water, a Loadstone swimming freely in a boat of cork, will presently make unto it. And so if a steele or knife untouched be offered toward the needle that is touched, the needle nimbly moveth toward it, and conformeth unto union with the steele that moveth not. Againe, If a Loadstone be finely filed, the atoms or dust thereof will adheare unto iron that was never touched, even as the powder of iron doth also unto the Loadstone. And lastly, If in two skiphs of cork, a Loadstone and steele be placed within the orbe of their activities, the one doth not move, the other standing still, but both hoise sayle and steere unto each other; so that if the Loadstone attract, the steele hath also its attraction; for in this action the Alliciency is reciprocall, which joyntly felt, they mutually approach and run into each others armes.

And therefore surely more moderate expressions become this action, then what the Ancients have used, which some have delivered in the most violent termes of their language, so Austine cals it,

Mirabilem

Mirabilem ferri raptorem: Hippocrates, λίθος ὅτι τὸ σίδηρον ἁρπάζει, *Lapis qui ferrum rapit.* Galen disputing against Epicurus useth the terme ἕλκειν. but that is also too violent: among the Ancients Aristotle spake most warily, λίθος ὅτις τὸ σίδηρον κινεῖ, *Lapis qui ferrum movet:* and in some tollerable acception do runne the expressions of Aquinas, Scaliger and Cusanus.

Many relations are made, and great expectations are raised from the Magnes Carneus, or a Loadstone, that hath a faculty to attract not onely Iron but flesh; but this upon enquiry, and as Cabeus hath also observed, is nothing else but a weake an inanimate kinde of Loadstone, veyned here and there with a few magneticall and ferreous lines, but chiefly consisting of a bolary and clammy substance, whereby it adheres like Hæmatites, or Terra Lemnia, unto the Lipps, and this is that stone which is to be understood, when Physitions joyn it with Ætites or the Eagle stone, and promise therein a vertue against abortion.

There is sometime a mistake concerning the variation of the compasse, and therein one point is taken for another. For beyond the Æquator some men account its variation by the diversion of the Northerne point, whereas beyond that circle the Southerne point is soveraigne, and the North submits his preheminency. For in the Southerne coast either of America or Africa, the Southerne point deflects and varieth toward the land, as being disposed and spirited that way by the meridionall and proper Hemisphere. And therefore on that side of the earth the varying point is best accounted by the South. And therefore also the writings of some, and Maps of others, are to be enquired, that make the needle decline unto the East twelve degrees at Capo Frio, and fixe at the straits of Magellan, accounting hereby one point for another, and preferring the North in the liberties and province of the South.

But certainely false it is what is commonly affirmed and beleeved, that Garlick doth hinder the attraction of the Loadstone; which is notwithstanding delivered by grave and worthy Writers; by Pliny, Solinus, Ptolomy, Plutarch, Albertus, Mathiolus, Rueus, Langius, and many more. An effect as strange as that of Homers Moly, and the Garlick the gods bestowed upon Ulysses. But that it is evidently false, many experiments declare. For an Iron wire heated red hot and quenched in the juyce of Garlick, doth notwithstanding contract a verticity from the earth, and attracteth the Southerne point of the Needle. If also the tooth of a Loadstone be covered or stuck in Garlik, it will notwithstanding attract and animate any Needles excited and fixed in Garlick untill they begin to rust, doe yet retaine their attractive and polary respects.

Of the same stampe is that which is obtruded upon us by Authors

ancient and moderne, that an Adamant or Diamond prevents or ſuſpends the attraction of the Loadſtone, as is in open termes delivered by Pliny. *Adamas diſſidet cum Magnete Lapide ut juxta poſitus ferrũ non patiatur abſtrahi, aut ſi admotus magnes apprehenderit, rapiat atque auferat.* For if a Diamond be placed betweene a needle and a Loadſtone, there will nevertheleſſe enſue a Coition even over the body of the Diamond: and an eaſie matter it is to touch or excite a needle through a Diamond, by placing it at the tooth of a Loadſtone, and therefore the relation is falſe, or our eſtimation of theſe gems untrue; nor are they Diamonds which carry that name amongſt us.

It is not ſuddenly to be received what Paracelſus in his booke *De generatione rerum*, affirmeth, that if a Loadſtone be annointed with Mercuriall oyle, or onely put into Quickſilver, it omitteth its attraction for ever. For we have found that Loadſtones and touched needles which have laid long time in Quickſilver have not amitted their attraction, and we alſo finde that red hot needles or wires extinguiſhed in quickſilver, do yet acquire a verticity according to the Laws of poſition in extinction. Of greater repugnancy unto reaſon is that which he delivers concerning its graduation, that heated in fire & often extinguiſhed in oyle of Mars or Iron, it acquires an ability to extract or draw forth a naile faſtened in a wall; for, as we have declared before, the vigor of the Loadſtone is deſtroyed by fire, nor will it be reimpregnated by any other Magnete then the earth.

True it is, and we ſhall not deny, that beſides fire ſome other wayes there are of its deſtruction, as Age, Ruſte, and what is leaſt dreamt on an unnaturall or contrary ſituation; for being impolarily adjoyned unto a more vigorous Loadſtone, it will in a ſhort time exchange it poles, or being kept in undue poſition, that is, not lying on the meridian or with its poles inverted, it receaves in longer time impaire in activity exchange of faces, and is more powerfully preſerved by ſite then by the duſt of ſteele. But the ſudden and ſureſt way is fire, as we have declared before: that is, fire not onely actuall but potentiall; the one ſurely and ſuddenly, the other ſlowly and imperfectly; the one changing, the other deſtroying the figure. For if diſtilled Vinegar or Aqua-fortis be powred upon the powder of Loadſtone, the ſubſiding powder dryed, retaines ſome magneticall vertue, and will be attracted by the Loadſtone: but if the menſtruum or diſſolvent be evaporated to a conſiſtence, and afterward doth ſhoote into Icycles or cryſtalls, the Loadſtone hath no power upon them, and if in a full diſſolution of ſteele a ſeparation of parts be made by precipitation or exhalation, the exſiccated powder hath loſt its wings and aſcends not unto the Loadſtone. And though a Loadſtone fired do preſently omit its proper vertue, and according to the poſition in cooling contracts a new verticity from the earth, yet if the ſame be laid a while in Aqua fortis or other

corroſive

corrosive water, and taken out before a considerable corrosion, it still reserves its attraction, and will convert the Needle according to former polarity.

It is improbable what Pliny affirmeth concerning the object of its attraction, that it attracts not only ferreous bodies, but also *liquorem vitri*, for in the body of glasse there is no ferreous or magneticall nature which might occasion attraction. For of the glasse we use, the purest is made of the finest sand and the ashes of Chali or Glasseworte, and the courser or greene sort of the ashes of brake or other plants. Beside, vitrification is the last or utmost fusion of a body vitrifiable, and is performed by a strong and violent fire, which keeps the melted glasse red hot. Now certaine it is, and we have shewed it before, that the Loadstone will not attract even steele it selfe that is candent, much lesse the incongenerous body of glasse being fired. For fire destroyes the Loadstone, and therefore it declines it in its owne defence, and seekes no union with it. But that the Magnet attracteth more then common Iron, we can affirme. It attracteth the Smyris or Emery in powder, It draweth the shining or glassie powder brought from the Indies, and usually implyed in writing dust. There is also in Smiths cinders by some adhesion of Iron whereby they appeare as it were glazed, sometime to bee found a magneticall operation, for some thereof applyed have power to move the Needle.

It is also improbable and something singular what some conceive, and Eusebius Nierembergius a late writer and Jesuit of Spain delivers, that the body of man is magneticall, and being placed in a boate, the vessell will never rest untill the head respecteth the North; if this be true, the bodies of Christians doe lye unnaturally in their graves, and the Jews have fallen upon the natural position, who in the reverence of their Temple, do place their beds from North to South. This opinion confirmed would much advance the microcosmicall conceite, and commend the Geography of Paracelsus; who according to the cardinall points of the world divideth the body of man, and therefore working upon humane ordure, and by long preparation rendring it odiferous, he termes it *Zibeta Occidentalis*, Westerne Civet; making the face the East, but the posteriors the America or Westerne part of his microcosme. The verity or rather falsity hereof, might easily be tried in Wales, where there are portable boats, and made of leather, which would convert upon the impulsion of any verticity, and seeme to bee the same whereof in his description of Brittaine, Cæsar hath left some mention.

Another kinde of verticity, is that which Angelus *doce mihi jus, alias*, Michael Sundevogis, in a Tract *de sulphure*, discovereth in Vegetables, from sticks let fall or depressed under water; which equally framed and permitted unto themselves, will ascend at the upper end, or that

Anagrammatically.

that which was verticall in its vegetation; wherein notwithstanding, as yet, we have not found satisfaction; although perhaps too greedy of magnallities, we are apt to make but favourable experiments concerning welcome truths, and such desired verities.

It is also wondrous strange and untrue what Lælius Biſciola reporteth, that if unto ten ounces of Loadstone one of Iron be added, it encreaseth not unto eleven, but weighs ten ounces still: a relation inexcusable in the title of his worke, *Horæ ſubſecivæ*, or leasureable howres: the examination being as ready as the relation, and the falsity tryed as easily as delivered: nor is it to be omitted what is taken up by Cæsius Bernardus a late Mineralogist, and originally confirmed by Porta, that needles touched with a Diamond contract a verticity, even as they doe with a Loadstone, which will not consist with experiment. And therefore, as Gilbertus observeth, he might be deceived, in touching such needles with Diamonds, which had a verticity before, as we have declared most needles to have, and so had he touched them with gold or silver, he might have concluded a magneticall vertue therein.

In the same forme may we place Fracastorius his attraction of silver, Philostratus his Panturbes, Apollodorus, and Beda his relation of the Loadstone that attracted onely in the night: but most inexcusable is Franciscus Rueus, a man of our own profession, who in his Discourse of gemmes mentioned in the Apocalyps, undertakes a Chapter of the Loadstone; wherein substantially and upon experiment he scarce delivereth any thing, making enumeration of its traditionall qualities, whereof he seemeth to beleeve many, and some of those above, convicted by experience, he is fain to salve as impostures of the Devill. But Boetius de Boot Physitian unto Rodulphus the second, hath recompenced this defect; and in his Tract, *de lapidibus & gemmis*, speakes very materially hereof, and his discourse is consonant unto experience and reason.

As for relations Historicall, though many there be of lesse account, yet two alone deserve consideration; the first concerneth magneticall rockes, and attractive mountaines in severall parts of the earth. The other the tombe of Mahomet and bodies suspended in the aire. Of rocks magneticall there are likewise two relations; for some are delivered to be in the Indies, and some in the extremity of the North, and about the very pole; the Northerne account is commonly ascribed unto Olaus Magnus Archbishop of Upsale, who out of his predecessour Joannes, Saxo, and others, compiled a history of some Northerne Nations; but this assertion we have not discovered in that worke of his which passeth among us, and should beleeve his Geographie herein no more then that in the first line of his booke, when he affirmeth that Biarmia (which is not seventy degrees in latitude) hath the pole for its Zenith, and Equinoctiall for the Horizon.

Now

Now upon this foundation how uncertaine ſoever men have erected mighty illations, aſcribing thereto the cauſe of the needles direction, and conceiving the effluxions from theſe mountaines and rockes invite the lilly toward the north; which conceit though countenanced by learned men, is not made out either by experience or reaſon; for no man hath yet attained or given a ſenſible account of the pole by ſome degrees; it is alſo obſerved the needle doth verymuch vary as it approacheth the pole, whereas were there ſuch direction from the rocks, upon a nearer approachment it would more directly reſpect them. Beſide were there ſuch magneticall rocks under the pole, yet being ſo far removed they would produce no ſuch effect; for they that ſaile by the Iſle of Flua now called Elba in the Thuſcan ſea which abounds in veynes of Loadſtone, obſerve no variation or inclination of the needle, much leſſe may they expect a direction from rocks at the end of the earth. And laſtly, men that aſcribe thus much unto rocks of the north muſt preſume or diſcover the like magneticalls at the ſouth: For in the ſouthern ſeas and far beyond the Æquator, variations are large, and declinations as conſtant as in the northerne Ocean.

The other relation of Loadſtone, mines, and rocks, in the ſhore of India is delivered of old by Plinie; wherein ſaith he, they are ſo placed both in abundance and vigor, that it proves an adventure of hazard to paſſe thoſe coaſts in a ſhip with Iron nailes. Serapion the Moore an Author of good eſteeme and reaſonable antiquity, confirmeth the ſame, whoſe expreſſion in the word *magnes* in this. The mine of this ſtone is in the Sea coaſt of India, whereto when Ships approach, there is no Iron in them which flyes not like a bird unto theſe mountains, and therefore their Ships are faſtened not with Iron but wood, for otherwiſe they would bee torne to peeces. But this aſſertion how poſitive ſoever is contradicted by all Navigators that paſſe that way, which are now many and of our owne Nation, and might ſurely have been controuled by Nearchus the Admirall of Alexander, who not knowing the compaſſe, was faine to coaſt that ſhore.

For the relation concerning Mahomet, it is generally beleeved his tombe at Medina Talnabi, in Arabia, without any viſible ſupporters hangeth in the ayre betweene two Loadſtones artificially contrived both above and below, which conceit is very fabulous, and evidently falſe from the teſtimony of ocular Teſtators; who affirme his tombe is made of ſtone and lyeth upon the ground; as beſides others, the learned Voſſius obſerveth from Gabriel Sionita, & Joannes Heſronita, two Maronites in their relations hereof. Of ſuch intentions and attempt by Mahometans we read in ſome relators, and that might be the occaſion of the fable; which by tradition of time and diſtance of place enlarged into the ſtory of being accompliſhed: and this hath been promoted by attemps of the like nature; for we read in Plinie that one Dinocrates began

gan to Arche the Temple of Arſinoe in Alexandria with Loadſtone, that ſo her ſtatue might be ſuſpended in the ayre to the amazement of the beholders; and to lead on our credulity, herein confirmation may be drawne from Hiſtory and Writers of good authority : ſo is it reported by Ruffinus, that in the Temple of Serapis there was an iron chariot ſuſpended by Loadſtones in the ayre, which ſtones removed, the chariot fell and daſhed into peeces. The like doth Beda report of Bellerophons horſe which framed of iron, and placed betweene two Loadſtones with winges expanſed, hung pendulous in the ayre.

The verity of theſe ſtories we ſhall not further diſpute their poſſibility, we may in ſome way determine; if we conceive, what no man will deny, that bodies ſuſpended in the aire have this ſuſpenſion from one or many Loadſtones placed both above and below it, or elſe by one or many placed only above it. Likewiſe the body to be ſuſpended in reſpect of the Loadſtone above, is placed firſt at a pendulous diſtance in the medium, or elſe attracted unto that ſite by the vigor of the Loadſtone; and ſo we firſt affirm that poſſible it is a body may be ſuſpended between two Loadſtones; that is, it being ſo equally attracted unto both that it determineth it ſelfe unto neither : but ſurely this poſition will be of no duration; for if the ayre be agitated or the body waved either way, it omits the equilibration and diſpoſeth it ſelfe unto the neareſt attractor. Again, it is not impoſſible (though hardly feiſible) by a ſingle Loadſtone to ſuſpend an iron in the ayre, the iron being artificially placed, and at a diſtance guided toward the ſtone, untill it find the newtrall point wherein its gravity juſt equalls the magneticall quality, the one exactly extolling as much as the other depreſſeth; and thus muſt be interpreted Fracaſtorius. And laſtly, impoſſible it is that if an iron reſt upon the ground, and a Loadſtone be placed over it, it ſhould ever ſo ariſe as to hang in the way or medium; for that vigor which at a diſtance is able to overcome the reſiſtance of its gravity and to lift it up from the earth, will as it approacheth nearer be ſtill more able to attract it, and it will never remaine in the middle that could not abide in the extreams; and thus is to be underſtood Gilbertus. Now the way of *Baptiſta Porta* that by a thred faſteneth a needle to a table, and then ſo guides and orders the ſame, that by the attraction of the Loadſtone it abideth in the aire, infringeth not this reaſon; for this is a violent retention, and if the thred be looſened, the needle aſcends and adheres unto the Attractor.

The third conſideration concerneth relations Medicall, wherein what ever effects are delivered, they are derived from its minerall and ferreous condition, or elſe magneticall operation. Unto the ferreous and minerall quality pertaineth what Dioſcorides an ancient Writer and Souldier under Anthony and Cleopatra, affirmeth, that halfe a dram of Loadſtone given with honey and water, proves a purgative medi-

cine,

cine, and evacuateth groſſe humors; but this is a quality of great incertainty, for omitting the vehicle of water and honey, which is of a laxative power it ſelfe, the powder of ſome Loadſtones in this doſe doth rather conſtipate and binde, then purge and looſen the belly. And if ſometimes it cauſe any laxity it is probably in the ſame way with iron and ſteele unprepared, which will diſturbe ſome bodies, and worke by purge and vomit. And therefore, what is delivered in a booke aſcribed unto Galen that it is a good medicine in dropſies, and evacuates the waters of perſons ſo affected: It may I confeſſe by ſiccity and aſtriction afford a confirmation unto parts relaxed, and ſuch as be hydropically diſpoſed, and by theſe qualities it may be uſefull in Hernias or Ruptures, and for theſe it is commended by Ætius, Ægineta and Oribaſius, who only affirme that it containes the vertue of Hæmatites, and being burnt was ſometimes vended for it. To this minerall condition belongeth what is delivered by ſome, that wounds which are made with weapons excited by the Loadſtone, contract a malignity, and become of more difficult cure; which nevertheleſſe is not to be found in the inciſion of Chyrurgions with knives and lancets touched, which leave no ſuch effect behinde them. Hitherto muſt we alſo referre that affirmative which ſayes the Loadſtone is poyſon, and therefore in the liſts of poyſons we finde it in many Authors; but this our experience cannot confirme, and the practice of the King of Zeilan clearly contradicteth, who as Garcias *ab Horto*, Phyſitian unto the Spaniſh Viceroy delivereth, hath all his meat ſerved up in diſhes of Loadſtone, and conceives thereby he preſerveth the vigor of youth.

But ſurely from a magneticall activity muſt be made out what is let fall by Ætius, that a Loadſtone held in the hand of one that is podagricall doth either cure or give great eaſe in the gout. Or what Marcellus Empericus affirmeth, that as an amulet it alſo cureth the head-ach, wch are but additions unto its proper nature, and hopefull enlargements of its allowed attraction; for perceiving its ſecret power to draw unto it ſelfe magneticall bodies, men have invented a new attraction to draw out the dolor and paine of any part. And from ſuch grounds it ſurely became a philter, and was conceived a medicine of ſome venereall attraction, and therefore upon this ſtone they graved the Image of Venus according unto that of Claudian, *Venerem magnetica gemma figurat.* Hither muſt wee alſo referre what is delivered concerning its power to draw out of the body bullets and heads of arrows, and for the like intention is mixed up in plaiſters: which courſe although as vaine and ineffectuall it be rejected by many good Authors, yet is it not me thinks ſo readily to be denyed, nor the practice of many ages and Phyſitians which have thus compounded plaiſters, thus ſuddenly to be condemned, as may be obſerved in the *Emplaſtrum divinum Nicolai*, the *Emplaſtrum nigrum* of Augſpurge, the Opodeldoch and *Attracti-*

vum of Paracelſus, with ſeverall more in the Diſpenſatory of Wecker, and practiſe of Sennertus; the cure alſo of Hernias, or Ruptures in Pareus, and the method alſo of curation lately delivered by Daniel Beckherus, and approved by the Profeſſors of Leyden in the Tract *de Cultivoro Pruſſiaco*, 1636. that is, of a young man of Spruceland that caſually ſwallowed downe a knife about ten inches long, which was cut out of his ſtomach and the wound healed up. In which cure to attract the knife to a convenient ſituation, there was applyed a plaiſter made up with the powder of Loadſtone. Now this kinde of practice Libavius, Gilbertus, and lately Swickardus in his Ars Magnetica, condemne, as vaine, and altogether unuſefull; and their reaſon is, becauſe a Loadſtone in powder hath no attractive power; for in that forme it omits his polary reſpects, and looſeth thoſe parts which are the rule of its attraction: wherein to ſpeake compendiouſly, if experiment hath not deceived us, we firſt affirme, that a Loadſtone in powder omits not all attraction. For if the powder of a rich veine be in a reaſonable quantity preſented toward the Needle freely placed, it will not appeare to be void of all activity, but will be able to ſtir it; nor hath it only a power to move the Needle in powder and by it ſelfe, but this will it alſo doe, if incorporated and mixed with plaiſters, as we have made triall in the *Emplaſtrum de Minio*, with halfe an ounce of the maſſe, mixing a dram of Loadſtone, for applying the magdaleon or roale unto the Needle it would both ſtir and attract it; not equally in all parts, but more vigorouſly in ſome, according unto the mine of the ſtone more plentifully diſperſed in the maſſe. And laſtly, in the Loadſtone powdered, the polary reſpects are not wholly deſtroyed; for thoſe diminutive particles are not atomicall or meerly indiviſible, but conſiſt of dimenſions ſufficient for their conditions, though in obſcure effects. Thus if unto the powder of Loadſtone or Iron we admove the North pole of the Loadſtone, the powders or ſmall diviſions will erect and conforme themſelves thereto: but if the South pole approach, they will ſubſide, and inverting their bodies reſpect the Loadſtone with the other extreame. And this will happen not only in a body of powder together, but in any particle or duſt divided from it.

Now though we affirme not theſe plaiſters wholly ineffectuall, yet ſhall we not omit two cautions in their uſe, that therein the ſtone bee not too ſubtily powdered; for it will better manifeſt its attraction in a more ſenſible dimenſion; that where is deſired a ſpeedy effect, it may be conſidered whether it were not better to relinquiſh the powdered plaiſters, and to apply an entyre Loadſtone unto the part: And though the other be not wholly ineffectuall, whether this way be not more powerfull, and ſo might have been in the cure of the young man delivered by Beckerus.

The laſt conſideration, concerneth Magicall relations, in which account

count we comprehend effects derived and fathered upon hidden qualities, ſpecifical forms, Antipathies and Sympathies, whereof from received grounds of Art, no reaſons are derived. Herein relations are ſtrange and numerous, men being apt in all ages to multiply wonders, and Philoſophers dealing with admirable bodies as Hiſtorians have done with excellent men, upon the ſtrength of their great atchievements, aſcribing acts unto them not only falſe, but impoſſible, and exceeding truth as much in their relations, as they have others in their actions. Hereof we ſhall briefly mention ſome delivered by Authors of good eſteem, whereby we may diſcover the fabulous inventions of ſome, the credulous ſupinity of others, and the great diſſervice unto truth by both; multiplying obſcurities in nature, and authoriſing hidden qualities that are falſe, whereas wiſe men are aſhamed there are ſo many true.

And firſt, Dioſcorides puts upon it a ſhrewd quality, and ſuch as men are apt enough to experiment, and therewith diſcovers the incontinencie of a wife by placing the Loadſtone under her pillow; for then ſhee will not be able to remaine in bed with her husband. The ſame he alſo makes a helpe unto theevery; for theeves ſaith he, having a deſigne upon a houſe, doe make a fire at the foure corners thereof, and caſt therein the fragments of Loadſtone, whence ariſeth a fume that ſo diſturbeth the inhabitants, that they forſake the houſe and leave it to the ſpoyl of the robbers. This relation how ridiculous ſoever, hath Albertus taken up above a thouſand years after, & Marbodeus the Frenchman hath continued it the ſame in Latine verſe, which with the notes of Pictorious is currant unto our dayes. As ſtrange muſt be the Lithomancy or divination from this ſtone, whereby as Tzetzes in his Chyliads delivers, Helenus the Prophet foretold the deſtruction of Troy; and the Magick thereof, not ſafely to be beleeved, what was delivered by Orpheus, that ſprinkled with water it will upon a queſtion emit a voyce not much unlike an Infant. But ſurely the Loadſtone of Laurentius Guaſcus the Phyſitian is never to be matched, wherewith as Cardane delivereth, whatſoever needles or bodies were touched, the wounds and punctures made thereby, were never felt at all. And yet as ſtrange a vertue is that which is delivered by ſome that a Loadſtone preſerved in the ſalt of a Remora, acquires a power to attract gold out of the deepeſt Wells. Certainly a ſtudied abſurdity, not caſually caſt out, but plotted for a perpetuity: for the ſtrangeneſſe of the effect ever to bee admired, and the difficulty of the tryall never to bee convicted.

Theſe conceits are of that monſtroſity that they refute themſelves in their recitements: there is another of better notice, and whiſpered thorow the world with ſome attention; credulous and vulgar auditors readily beleeving it, and more judicious and diſtinctive heads, not alto-

gether rejecting it. The conceit is excellent, and if the effect would follow somwhat divine, whereby we might communicate like spirits, and conferre on earth with Menippus in the Moone; which is pretended from the sympathy of two needles touched with the same Loadstone, and placed in the center of two Abecedary circles, or rings with letters described round about them; one friend keeping one, & another the other, and agreeing upon an houre wherein they wil communicate. For then saith tradition, at what distance of place soever, when one needle shall be removed unto any letter; the other by a wonderfull Sympathy will move unto the same. But herein I confesse my experience can finde no truth; for having expresly framed two circles of wood, and according to the number of the Latine letters divided each into twenty three parts, placing therein two stiles or needles composed of the same steele, touched with the same Loadstone, and at the same point: yet of these two, whensoever I removed the one, although but at the distance of halfe a spanne, the other would stand like Hercules pillars, and if the earth stand still, have surely no motion at all. Now as it is not possible that any body should have no boundaryes, or as we terme it Sphere of its activity, so is it improbable it should effect that at distance, which nearer hand it cannot at all performe.

Againe, the conceit is ill contrived, and one effect inferred, whereas indeed the contrary will ensue. For if the removing of one of the needls from A to B should have any action or influence on the other, it would not intice it from A to B but repell it from A to Z: for needles excited by the same point of the stone, doe not attract, but avoyd each other, even as these also do, when their invigorated extreams approach unto one another.

Lastly, were this conceit assuredly true, yet were it not a conclusion at every distance to be tryed by every head: yet being no ordinary or Almanack businesse, but a probleme Mathematicall, to finde out the difference of houres in different places; nor doe the wisest exactly satisfie themselves in all. For the houres of severall places anticipate each other, according unto their Longitudes, which are not exactly discovered of every place, and therefore the triall hereof at a considerable intervall, is best performed at the distance of the Antæci; that is, such habitations as have the same Meridian and equall parallell, on different sides of the Equator; or more plainly have the same Longitude, and the same Latitude unto the South, which wee have in the North. For unto such Situations it is noone and midnight at the very same time.

And therefore the Sympathie of these needles is much of the same mould, with that intelligence which is pretended from the flesh of one body transmuted by incision into another. For if the Arte of Taliacotius *de Curtorum Chyrurgia per insitionem*, a permutation of flesh, or transmutation

transmutation be made from one mans body into another, as if a piece of flesh be exchanged from the biciptall muscle of either parties arme, and about them both, an Alphabet circumscribed; upon a time appointed as some conceptions affirme, they may communicate at what distance soever. For if the one shall prick himself in A, the other at the same time will have a sense thereof in the same part; and upon inspection of his arme, perceive what letters the other points out in his owne; which is a way of intelligence very strange, and would requite the Arte of Pythagoras; who could read a reverse in the Moone.

Now this Magneticall conceit how strange soever, might have some originall in reason; for men observing no solid body, whatsoever did interrupt its action, might be induced to beleeve no distance would terminate the same, & most conceiving it pointed unto the pole of heaven, might also opinion that nothing between could restrain it. Whosoever was the Author, the Æolus that blew it about, was Famianus Strada, that elegant Jesuit in his Rhetoricall prolutions, who chose out of this subiect to expresse the stile of Lucretius. But neither *Baptista Porta, de furtivis literarum notis*; Trithemius in his Steganography, Silenus in his Cryptography, or Nuncius *inanimatus* written of late yeers by Dr Godwin Bishop of Herford, make any consideration hereof: although they deliver many wayes to communicate our thoughts at distance. And this we will not deny may in some manner be effected by the Loadstone; that is, from one room into an other, by placing a table in the wall common unto both, and writing thereon the same letters one against another: for upon the approach of a vigorous Loadstone unto a letter on this side, the needle will move unto the same on the other: But this is a very different way from ours at present; and hereof there are many wayes delivered, and more may be discovered which contradict not the rule of its operations.

As for *unguentum Armarium*, called also *Magneticum*, it belongs not to this discourse, it neither having the Loadstone for its ingredient, nor any one of its actions: but supposeth other principles, as common and universall spirits, which convey the action of the remedy unto the part, and conjoynes the vertue of bodies far disjoyned. But perhaps the cures it doth, are not worth so mighty principles; it commonly healing but simple wounds, and such as mundified and kept cleane, doe need no other hand then that of Nature, and the Balsam of the proper part. Unto which effect, there being fields of Medicines sufficient, it may bee a hazardous curiositie to relie on this; and because men say the effect doth generally follow, it might be worth the experiment to try, if the same will not ensue upon the same method of cure, by ordinary Balsams, or common vulnerary plasters.

Other Discourses there might be made of the Loadstone, as Morall, Mysticall, Theologicall; and some have handsomly done them, as Ambrose,

broſe, Auſtine, Gulielmus Pariſienſis, and many more; but theſe fal under no rule, and are as boundles as mens inventions; and though honeſt minds do glorifie God hereby, yet do they moſt powerfully magnifie him, and are to be looked on with another eye, who demonſtratively ſet forth its Magnalities, who not from poſtulated or precarious inferences, entreate a courteous aſſent, but from experiments and undeniable effects, enforce the wonder of its Maker.

Chap. IV.

Of bodies Electricall.

HAving thus ſpoake of the Loadſtone and bodies magneticall, I ſhall in the next place deliver ſomewhat of Electricall, and ſuch as may ſeeme to have attraction like the other; and hereof wee ſhall alſo deliver what particularly ſpoken or not generally knowne is manifeſtly or probable true, what generally beleeved is alſo falſe or dubious. Now by Electricall bodies, I underſtand not ſuch as are Metallicall mentioned by Pliny, and the Ancients; for their Electrum was a mixture made of gold, with the addition of the fifth part of ſilver, a ſubſtance now as unknowne, as true Aurichalcum, or Corinthian braſſe, and ſet downe among things loſt by Pancirollus. Nor by Electrick bodies do I conceive ſuch onely as take up ſhavings, ſtrawes, and light bodies, in which number the Ancients onely placed Jet and Amber; but ſuch as conveniently placed unto their objects attract all bodies palpable whatſoever. I ſay, conveniently placed, that is, in regard of the object, that it be not too ponderous, or any way affixed in regard of the Agent, that it be not foule or ſullied, but wiped, rubbed, and excitated in regard of both, that they be conveniently diſtant, and no impediment interpoſed. I ſay all bodies palpable, thereby excluding fire, which indeed it will not attract, nor yet draw through it, for fire conſumes its effluxions by which it ſhould attract.

Now although in this ranke but two were commonly mentioned by the Ancients, Gilbertus diſcovereth many more, as Diamonds, Saphyres, Carbuncles, Iris, Opalls, Amethiſtes, Berill, Chryſtall, Briſtoll ſtones, Sulphur, Maſtick, hard Wax, hard Roſin, Arſenic, Sal gemme, roch Alume, common Glaſſe, Stibium, or glaſſe of Antimony; unto theſe Cabeus addeth white Wax, Gum Elemi, Gum Guaici, Pix Hiſpanica, and Gypſum. And unto theſe wee adde gum Anime, Benjamin, Talcum, Chyna diſhes, Sandaraca, Turpentine, Styrax Liquida, and Caranna dryed into a hard conſiſtence. And the ſame attraction wee finde not onely in ſimple bodies, but ſuch as are much compounded, as the Oxicroceum plaſter, and obſcurely that *ad Herniam*, and *Gratia Dei*, all which ſmooth and rightly prepared, will diſcover

ver a ſufficient power to ſtirre the needle ſetled freely upon a wel pointed pinne, and ſo as the Electrick may be applyed unto it without all diſadvantage.

But the attraction of theſe Electricks we obſerve to be very different. Reſinous or unctuous bodies, and ſuch as will flame, attract moſt vigorouſly and moſt thereof without frication, as Anime, Benjamin and moſt powerfully good hard wax, which will convert the needle almoſt as actively as the loadſtone; and wee beleeve that all or moſt of this ſubſtance if reduced to hardneſſe tralucency or cleereneſſe, would have ſome attractive quality; but juyces concrete, or gums eaſily diſſolving in water, draw not at all, as Aloe, Opium, Sanguis Draconis, Lacca, Galbanum, Sagapenum. Many ſtones alſo both precious and vulgar, although terſe and ſmooth have not this power attractive; as Emeralds, Pearle, Jaſpis, Corneleans, Agathe, Heliotropes, Marble, Alablaſter, Touchſtone, Flint and Bezoar. Glaſſe attracts but weakely though cleere, ſome ſlick ſtones and thick glaſſes indifferently: Arſenic but weakely, ſo likewiſe glaſſe of Antimony, but Crocus Metallorum not at all. Saltes generally but weakely, as Sal Gemma, Alum and alſo Talke; nor very diſcoverably by any frication: but if gently warmed at the fire, and wiped with a dry cloth, they will better diſcover their Electricities.

No mettall attracts, nor any concretian Animall wee know, although polite and ſmoothe; as wee have made triall in Elkes hooves, Hawkes talons, the ſword of a Sword fiſh, Tortoyſe ſhels, Sea-horſe and Elephants teeth, in bones, in Harts horne, and what is uſually conceived Unicornes horne, no wood though never ſo hard and poliſhed, although out of ſome Electricks proceed, as Ebony, Box, Lignum vitæ, Cedar, &c. And although Jet and Amber be reckoned among Bitumens, yet neither doe we finde Aſphaltus, that is, Bitumen of Judea, nor Seacole, nor Camphire, nor Mummia to attract, although we have tried in large and poliſhed pieces. Now this attraction have wee tried in ſtrawes and paleous bodies, in needles of Iron equilibrated, powders of wood and Iron, in gold and ſilver foliate, and not onely in ſolid but fluent and liquid bodies, as oyles made both by expreſſion and diſtillation, in water, in ſpirits of wine, vitrioll and Aqua fortis.

But how this attraction is made is not ſo eaſily determined; that tis performed by effluviums is plaine and granted by moſt; for Electricks will not commonly attract, except they grow hot or be perſpicable. For if they be foule and obnubilated, it hinders their effluxion; nor if they be covered though but with Linnen or Sarſenet, or if a body be interpoſed, for that intercepts the effluvium. If alſo a powerfull and broad Electrick of wax or Anime be held over fine powder, the Atomes or ſmall particles will aſcend moſt numerouſly unto it; and if the Electrick be held unto the light, it may be obſerved that many

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thereof will flye, and be as it were discharged from the Electrick to the distance sometime of two or three inches, which motion is performed by the breath of the effluvium issuing with agility; for as the Electrick cooleth, the projection of the Atomes ceaseth.

The manner hereof Cabeus wittily attempteth, affirming that this effluvium attenuateth and impelleth the neighbour ayre, which returning home in a gyration, carrieth with it the obvious bodies unto the Electrick, and this he labours to confirme by experiments; for if the strawes be raised by a vigorous electrick, they doe appeare to wave and turne in their ascents; if likewise the Electrick be broad and the strawes light and chaffy, and held at a reasonable distance, they will not arise unto the middle, but rather adhere toward the verge or borders thereof. And lastly, if many strawes be laid together and a nimble Electrick approach, they will not all arise unto it, but some will commonly start aside and be whirled a reasonable distance from it. Now that the ayre impelled returnes unto its place in a gyration or whirling, is evident from the Atomes or moates in the Sun. For when the Sunne so enters a hole or window, that by its illumination the Atomes or moates become perceptible, if then by our breath the ayre bee gently impelled, it may be perceived that they will circularly returne, and in a gyration unto their places againe.

Another way of their attraction is also delivered, that it is made by a tenuous emanation or continued effluvium, which after some distance retracteth into it selfe, as is observable in drops of syrups, oyle and seminall viscosities, which spun at length retire into their former dimensions. Now these effluviums advancing from the body of the Electrick, in their returne doe carry back the bodies which they have laid hold within the spheare or circle of their continuities, and these they do not onely attract but with their viscous armes, hold fast a good while after. And if any shall wonder why these effluviums issuing forth impell and protrude not the straw before they can bring it back, it is because Effluvium passing out in a smaller thred and more enlengthened filament, it stirreth not the bodies interposed but returning unto its originall it falls into a closer substance, and carrieth them back unto it selfe. And this way of attraction is best received, embraced by Sir Kenelme Digby in his excellent Treaty of bodies, allowed by *Des Cartes* in his principles of Philosophy, as farre as concerneth fat and resinous bodies, and with exception of glasse, whose attraction he also deriveth from the recesse of its effluxion. And this in some manner the words of Gilbertus will beare. *Effluvia illa tenuiora concipiunt & amplectuntur corpora, quibus uniuntur, & Electris tanquam extensis brachiis & ad fontem, propinquitate invalescentibus effluviis, deducuntur.* And if the ground were true that the earth were an Electrick body, and the ayre but the effluvium thereof, wee might perhaps beleeve that from this attraction

attraction and by this effluxion that bodies tended to the earth, and could not remaine aboue it.

Our other diſcourſe of Electricks concerneth a generall opinion touching Jet and Amber, that they attract all light bodies, except Ocymum or Baſil, and ſuch as be dipped in oyle or oyled, and this is urged as high as Theophraſtus: but Scaliger acquitteth him, And had this bin his aſſertion, Pliny would probably have taken it up, who herein ſtands out, and delivereth no more but what is vulgarly known. But Plutarch ſpeakes poſitively in his Sympoſiacks, that Amber attracteth all bodies, excepting Baſil and oyled ſubſtances. With Plutarch conſent many Authors both ancient and moderne, but the moſt inexcuſable are Lemnius, and Rueus, whereof the one delivering the nature of minerals, mentioned in Scripture the infallible fountaine of truth, confirmeth their vertues with erroneous traditions; the other undertaking the occult and hidden miracles of Nature, accepteth this for one, and endeavoureth to alledge a reaſon of that which is more then occult, that is not exiſtent.

Now herein, omitting the Authority of others, as the doctrine of experiment hath informed us we firſt affirme, that Amber attracts not Baſil, is wholly repugnant unto truth; for if the leaves thereof or dryed ſtalkes be ſtripped into ſmall ſtrawes, they ariſe unto Amber, Wax, and other Electries no otherwiſe then thoſe of Wheate or Rye; nor is there any peculiar fatneſſe or ſingular viſcoſity in that plant that might cauſe adheſion and ſo prevent its aſcenſion. But that Jet and Amber attract not ſtrawes oyled, is in part true and falſe, for if the ſtrawes be much wet or drenched in oyle, true it is that Amber draweth them not, for then the oyle makes the ſtraw to adhere unto the part whereon they are placed, ſo that they cannot riſe unto the Attractor; and this is true not onely if they be ſoaked in oyle, but ſpirits of wine or water. But if we ſpeake of ſtrawes or feſtucous diviſions lightly drawen over with oyle, and ſo that it cauſeth no adheſion, or if we conceive an antipathy betweene oyle and Amber, the doctrine is not true; for Amber will attract ſtrawes thus oyled, it will attract or convert the Needls of Dials made either of Braſſe or Iron, although they be much oyled; for in theſe Needls conſiſting free upon their center there can be no adheſion; it will likewiſe attract oyle it ſelfe, and if it approacheth unto a drop thereof, it becommeth conicall and ariſeth up unto it, for oyle taketh not away his attraction, although it be rubbed over it. For if you touch a piece of wax already excitated with common oyle, it will notwithſtanding attract, though not ſo vigorouſly as before. But if you moyſten the ſame with any chymicall oyle, water or ſpirits of wine, or onely breath upon it, it quite omits its Attraction, for either its effluences cannot get through or will not mingle with thoſe ſubſtances.

It is likewiſe probable the Ancients were generally miſtaken concerning its ſubſtance and generation, they conceiving it a vegetable concretion made of the gums of trees, eſpecially, Pine and Poplar falling into the water, and after indurated or hardened, whereunto accordeth the fable of Phaetons ſiſters: but ſurely the concretion is minerall, according as is delivered by Boetius; for either it is found in mountaines and mediterraneous parts, and ſo it is a fat and unctuous ſublimation in the earth concreted and fixed by ſalt and nitrous ſpirits wherewith it meeteth; or elſe, which is moſt uſuall, it is collected upon the ſea ſhore, and ſo it is a fat and bituminous Juice coagulated by the ſaltneſſe of the ſea. Now that ſalt ſpirits have a power to congele and coagulate unctuous bodies, is evident in chymicall operations, in the diſtillations of Arſenick, ſublimate and Antimony, in the mixture of oyle of Juniper, with the ſalt and acide ſpirit of Sulphur, for thereupon enſueth a concretion unto the conſiſtence of Birdlime; as alſo in ſpirits of ſalt, or Aqua fortis powred upon oyle of Olive, or more plainly in the manufacture of Soape. And many bodies will coagulate upon commixture whoſe ſeparated natures promiſe no concretion. Thus upon a ſolution of Tinne by Aqua fortis, there will enſue a coagulation, like that of whites of egges. Thus the volatile ſalt of urine will coagulate Aqua vitæ, or ſpirits of wine; and thus perhaps (as Helmont excellently declareth) the ſtones or calculous concretions in Kidney or bladder may be produced: the ſpirits or volatile ſalt of urine conjoyning with the Aqua vitæ potentially lying therein; as he illuſtrateth from the diſtillation of fermented urine. From whence ariſeth an Aqua vitæ or ſpirit, which the volatile ſalt of the ſame urine will congele, and finding an earthy concurrence ſtrike into a lapideous ſubſtance.

Laſtly, we will not omit what Bellabonus upon his own experiment writ from Dantzich unto Mellichius, as hee hath left recorded in his Chapter, *De ſuccino*, that the bodies of Flies, Piſmires, and the like, which are ſaid oft times to be included in Amber, are not reall but apparent and repreſentative, as he diſcovered in ſeverall pieces broke for that purpoſe; if ſo, the two famous Epigrams hereof in Martiall are but poeticall, the Piſmire of Braſſavolus Imaginary, and Cardans Mouſoleum for a flye, a meere phancy. But hereunto we know not how to aſſent in the Generall, as having met with ſome whoſe Reals made good their repreſentations.

CHAP.

Chap. V.

Compendiously of sundry other common Tenents, concerning Minerall and Terreons bodies, which examined, prove either false or dubious.

1. And first we hear it in every mans mouth, and in many good Authors we reade it, That a Diamond, which is the hardest of stones, and not yielding unto steele, Emery, or any thing, but its own powder, is yet made soft, or broke by the bloud of a Goat; Thus much is affirmed by Pliny, Solinus, Albertus, Cyprian, Austin, Isidore, and many Christian Writers, alluding herein unto the heart of man, and the precious bloud of our Saviour, who was typified indeed by the Goat that was slaine, and the scape Goat in the wildernesse; and at the effusion of whose bloud, not onely the hard hearts of his enemies relented, but the stony rocks and vaile of the Temple was shattered. But this I perceive is easier affirmed then proved. For Lapidaries, and such as professe the art of cutting this stone, doe generally deny it, and they that seem to countenance it, have in their deliveries so qualified it, that little from thence of moment can be inferred for it. For first, the holy Fathers, without a further enquiry did take it for granted, and rested upon the authority of the first deliverers. As for Albertus, he promiseth this effect but conditionally, that is not except the Goat drinke wine, and be fed with *Siler montanum, petroselinum,* and such hearbes as are conceived of power to breake the stone in the bladder. But the words of Pliny from whom most likely the rest at first derived it, if strictly considered, doe rather overthrow, then any way advantage this effect. His words are these: *Hircino rumpitur sanguine, nec aliter quam recenti, calidoque macerata, & sic quoque multis ictibus, tunc etiam præterquam eximias incudes malleosque ferreos frangens.* That is, it is broken with Goats blood, but not except it bee fresh and warme, and that not without many blows, and then also it will breake the best anvills and hammers of iron. And answerable hereto, is the assertion of Isidore and Solinus. By which account, a Diamond steeped in Goats bloud, rather encreaseth in hardnesse, then acquireth any softnesse by the infusion; for the best we have are comminuible without it, and are so far from breaking hammers, that they submit unto pistillation, and resist not an ordinary pestle.

Upon this conceit arose, perhaps the discovery of another; that is, that the bloud of a Goat, was sovereigne for the stone, as it stands commended by many good Writers, and brings up the composition in the Lithontripticke powder of Nicolaus; or rather because it was found an excellent medicine for the stone, and its ability commended by some to dissolve the hardest thereof; it might be conceived by amplifying apprehensions, to be able to breake a Diamond, and so it came to be

ordered that the Goat ſhould be fed with ſaxifragous herbes, and ſuch as are conceived of power to breake the ſtone. However it were as the effect is falſe in the one, ſo is it ſurely very doubtfull in the other. For although inwardly received it may be very diuretick, and expulſe the ſtone in the kidnyes; yet how it ſhould diſſolve or breake that in the bladder, will require a further diſpute, and perhaps would be more reaſonably tryed by a warme injection thereof, then as it is commonly uſed. Wherein notwithſtanding, we ſhould rather relie upon the urine in a Caſtlings bladder, a reſolution of Crabs eyes, or the ſecond diſtillation of urine, as Helmont hath commended; or rather, if any ſuch might be found a Chylifactory menſtruum or digeſtive preparation drawne from ſpecies or individualls, whoſe ſtomacks peculiarly diſſolve lapideous bodies.

2. *That glaſſe is poyſon*, according unto common conceit, I know not how to grant not only from the innocency of its ingredients, that is fine ſand, and the aſhes of glaſſe-wort or fearne, which in themſelves are harmleſſe and uſefull: or becauſe I finde it by many commended for the ſtone, but alſo from experience, as having given unto dogs above a dram thereof, ſubtilly powdered in butter or paſte, without any viſible diſturbance. And the tryall thereof we the rather did make in that animall, becauſe Grevinus in his Treaty of poyſons, affirmeth that dogges are inevitably deſtroyed thereby.

The conceit is ſurely grounded upon the viſible miſchiefe of glaſſe groſſely or courſely powdered; for that indeed is mortally noxious, and effectually uſed by ſome to deſtroy myce and rats; for that by reaſon of its acuteneſſe and augularity, commonly excoriates the parts through which it paſſeth, and ſollicits them unto a continuall expulſion. Whereupon there enſues fearfull ſymptomes, not much unlike thoſe which attend the action of poyſon. From whence notwithſtanding, we cannot with propriety impoſe upon it that name, either by occult or elementary quality; which he that concedeth will much enlarge the catalogue or liſtes of poyſons; for many things, neither deleterious by ſubſtance or quality, are yet deſtructive by figure, or ſome occaſionall activity. So are leeches deſtructive, and by ſome accounted poyſon; not properly, that is by temperamentall contrariety, occult forme, or ſo much as elementall repugnancy; but becauſe being inwardly taken they faſten upon the veines, and occaſion an effuſion of bloud, which cannot be eaſily ſtanched. So a ſponge is miſchievous, not in it ſelfe, for in its powder it is harmleſſe, but becauſe being received into the ſtomack it ſwelleth, and occaſioning a continuall diſtenſion, induceth at laſt a ſtrangulation. So pins, needls, eares of Rye or Barley, may be poyſon. So Daniel deſtroyed the Dragon by a compoſition of three things, whereof neither was poyſon alone, nor properly altogether, that is pitch, fat and haire, according as is expreſſed

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in the Hiſtory. Then Daniel tooke pitch, and fat, and haire, and did ſeeth them together and made lumps thereof, theſe he put in the Dragons mouth, and ſo he burſt aſunder; that is the fat and pitch being cleaving bodies, and the haire continually extimulating the parts, by the action of the one, nature was provoked to expell, but by the tenacity of the other forced to retaine: ſo that there being left no paſſage in or out, the Dragon brake in peeces. It muſt therefore bee taken of groſſely powdered glaſſe what is delivered by Grevinus, and from the ſame muſt that mortall diſſentery proceed which is related by Sanctorius; and in the ſame ſenſe ſhall we onely allow a Diamond to be poyſon, and whereby as ſome relate Paracelſus himſelfe was poyſoned. And ſo alſo even the precious fragments and cordiall gems which are of frequent uſe in Phyſicke, and in themſelves confeſſed of uſefull faculties, received in groſſe and angular powders, may ſo offend the bowells, as to procure deſperate languors, or cauſe moſt dangerous fluxes.

3. That Gold inwardly taken, and that either in ſubſtance, infuſion, decoction or extinction, is a ſpeciall cordiall of great efficacy, in ſundry medicall uſes, although a practice much uſed is alſo much queſtioned, and by no man determined beyond diſpute. There are hereof I perceive two extream opinions; ſome exceſſively magnifying it, and probably beyond its deſerts; others extreamly vilifying it, and perhaps below its demerits. Some affirming it is a powerfull medicine in many diſeaſes, others averring that ſo uſed it is effectuall in none; and in this number are very eminent Phyſitians, Eraſtus, Duretus, Rondeletius, Braſſavolus, and many other; who beſide the ſtrigments and ſudorous adheſions from mens hands, acknowledge that nothing proceedeth from gold in the uſuall decoction thereof. Now the capitall reaſon that led men unto this opinion was their obſervation of the inſeperable nature of gold; it being excluded in the ſame quantity as it was received without alteration of parts, or diminution of its gravity.

Now herein to deliver ſomewhat which in a middle way may be entertained; we firſt affirm & few I beleeve will deny it, that the ſubſtance of gold is indeed invincible by the powerfulleſt action of naturall heat, and that not only alimentally in a ſubſtantiall mutation, but alſo medicamentally in any corporeall converſion; as is very evident, not only in the ſwallowing of golden bullets but in the leſſer and foliate diviſions thereof; paſſing the ſtomack and guts even as it doth the throat, that is without abatement of weight or conſiſtence; ſo that it entereth not the veynes with thoſe electuaries, wherein it is mixed, but taketh leave of the permeant parts, at the mouthes of the miſeraicks, and accompanieth the inconvertible portion unto the ſiege; nor is its ſubſtantiall converſion expectible in any compoſition or aliment wherein it is taken. And therefore that was truly a ſtarving abſurdity, which befell

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the wiſhes of Midas. And little credit there is to be given to the golden Hen, related by Wendlerus. And ſo likewiſe in the extinction of gold, we muſt not conceive it parteth with any of its ſalt or diſſoluble principle thereby, as we may affirme of Iron, for the parts thereof are fixed beyond diviſion; nor will they ſeperate upon the ſtrongeſt teſt of fire. And this we affirme of pure gold, for that which is currant and paſſeth in ſtampe amongſt us, by reaſon of its allay, which is a proportion of copper mixed therewith, it is actually dequantitated by fire, and poſſibly by frequent extinction.

Secondly, although the ſubſtance of gold be not ſenſibly immuted or its gravity at all decreaſed, yet that from thence ſome vertue may proceed either in ſubſtantiall reception or infuſion, we cannot ſafely deny. For poſſible it is that bodyes may emit a vertue and operation without abatement of weight, as is moſt evident in the Loadſtone, whoſe effluencies are both continuall and communicable without a minoration of gravity. And the like is obſervable in bodies electricall, whoſe emiſſions are leſſe ſubtile. So will a Diamond or Saphire emit an effluvium ſufficient to move the needle or a ſtraw without diminution of weight. Nor will poliſhed amber although it ſend forth a groſſe and corporall exhalement be found a long time defective upon the exacteſt ſcales.

Thirdly, if amulets doe worke by Aporrhoias, or emanations from their bodies, upon thoſe parts whereunto they are appended, and are not yet obſerved to abate their weight; if they produce viſible and reall effects by imponderous and inviſible emiſſions, it may be unjuſt to deny all efficacie of gold in the non-omiſſion of weight, or deperdition of any ponderous particles.

Laſtly, ſince Stibium or glaſſe of Antimony, ſince alſo its Regulus will manifeſtly communicate unto water, or wine, a purging and vomitory operation; and yet the body it ſelfe, though after iterated infuſions, cannot be found to abate either vertue or weight; I dare not deny but gold may doe the like; that is, impart ſome effluences unto the infuſion which carry with them the ſubtiler nature, and ſeparable conditions of its body.

That therefore this mettall thus received, hath any undeniable effect upon the body either from experience in others or my ſelfe, I cannot ſatisfactorily affirm. That poſſibly it may have I not wil at all deny. But from power unto act, from a poſſible unto an actuall operation, the inference is not reaſonable. And therefore ſince the point is dubious, and not yet authentically decided, it will be diſcretion not to depend on diſputable remedies; but rather in caſes of knowne danger, to have recourſe unto medicines of knowne and approved activity; for beſide the benefit accruing unto the ſicke, hereby may be avoyded a groſſe and frequent error, commonly committed in the uſe of doubtfull remedies,

medies, conjoyntly with those which are of approved vertue. That is, to impute the cure unto the conceited remedy, or place it on that whereon they place their opinion, whose operation although it be nothing, or its concurrence not considerable, yet doth it obtaine the name of the whole cure, and carryeth often the honour of the capitall energie, which had no finger in it.

4. That a pot full of ashes, will still containe as much water as it would without them, although by Aristotle in his problems taken for granted, and so received by most, is surely very false, and not effectible upon the strictest experiment I could ever make. For when the ayery interstices are filled, and as much of the salt of the ashes as the water will imbibe is dissolved, there remaines a grosse and terreous portion at the bottome which will possesse a space by it selfe, according whereto there will remaine a quantity of water not receiveable, and so will it come to passe in a pot of salt, although decrepitated; and so also in a pot of snow. For so much it will want in reception, as its solution taketh up, according unto the bulke whereof, there will remaine a portion of water not to be admitted. So a glasse stuffed with peeces of spunge, will want about a sixt part of what it would receive without it. So suger will not dissolve beyond the capacity of the water, nor a mettall in Aqua-fortis bee corroded beyond its reception. And so a pint of salt of tartar exposed unto a moist aire untill it dissolve, will make far more liquor, or as some tearm it oyle, then the former measure will contain.

Nor is it only the exclusion of ayre by water, or repletion of cavities possessed thereby which causeth a pot of ashes to admit so great a quantity of water, but also the solution of the salt of the ashes into the body of the dissolvent; so a pot of ashes will receive somewhat more of hot water then of cold, for as much as the warme water imbibeth more of the salt, and a vessell of ashes more then one of pindust or filings of Iron, and a glasse full of water, will yet drinke in a proportion of salt or suger without overflowing.

5. Of white powder and such as is discharged without report, there is no small noise in the world: but how far agreeable unto truth, few I perceive are able to determine. Herein therefore to satisfie the doubts of some, and amuse the credulity of others, We first declare; that gunpowder consisteth of three ingredients, that is, Salt-peter, Smal-coale, and Brimstone. Salt-peter, although it be also naturall and found in severall places, yet is that of common use an artificiall salt, drawn from the infusion of salt earth, as that of Stals, Stables, Dovehouses, Cellers, and other covered places, where the raine can neither dissolve, nor the sunne approach to resolve it. Brimstone is a Minerall body of fat and inflamable parts, and this is used crude, and called sulphur vive, and is of a sadder colour; or after depuration, such as we have in magdelcons

or

or rolls, of a lighter yellow: Smal-coale is commonly known unto all, and for this use is made of Sallow, Willow, Alder, Hasell, and the like, which three proportionably mixed, tempered, and formed into granulary bodies, doe make up that powder which is in use for gunnes.

Now all these although they bear a share in the discharge, yet have they distinct intentions, and different offices in the composition: from brimstone proceedeth the continued and durable firing, for Small coal and peter together will onely spit, nor easily continue the ignition. From Small-coale ensueth the black colour and quicke accension; for neither brimstone nor peter, although in powder, will take fire like Small-coale, nor will they easily kindle upon the sparks of a flint, as neither will Camphire a body very inflamable, but small-coal is equivolent to tinder, and serveth to light the sulphur: from salt-peter proceedeth the force and the report, for sulphur and small-coale mixed will not take fire with noise, or exilition, and powder which is made of impure, and greasie peter, hath but a weake emission, and giveth a faint report, and therefore in the three sorts of powder, the strongest containeth most salt-peter, and the proportion thereof is at the least ten parts of peter, unto one of coale and sulphur.

But the immediate cause of the report, is the vehement commotion of the ayre upon the sudden and violent eruption of the powder; for that being suddenly fired, and almost altogether, being thus ratified it requireth by many degrees a greater space then before its body occupied; but finding resistance, it actiuely forceth out his way, and by concussion of the aire, occasioneth the report. Now with what vigour and violence it forceth upon the aire, may easily be conceived, if wee admit what Cardan affirmeth, that the powder fired doth occupie a hundred times a greater space then its own bulke, or rather what Snellius more exactly accounteth; that it exceedeth its former space no lesse then 12000. and 500. times. And this is the reason not onely of this tonnitruous and fulminating report of gunnes, but may resolve the cause of those terrible cracks, and affrighting noise of heaven; that is, the nitrous and sulphureous exhalations, set on fire in the cloudes, whereupon requiring a larger place, they force out their way, not only with the breaking of the cloud, but the laceration of the ayre about it. When if the matter be spirituous, and the cloud compact, the noise is great and terrible: If the cloud be thinne, and the materials weake, the eruption is languide, and ending in corruscations without any noyse, although but at the distance of two miles, which is esteemed the remotest distance of clouds; and therefore such lightnings doe seldome any harme. And therefore also it is prodigious to have thunder in a cleare skye, as is observably recorded in some Histories.

Now therefore, he that would destroy the report of Powder, must worke upon the peter, he that would exchange the colour, must thinke how

how to alter the ſmall coale. For the one, that is, to make white powder, it is ſurely many wayes feaſible: The beſt I know is by the powder of rotten willowes, ſpunck, or touchwood prepared, might perhaps make it ruſſet: and ſome as Beringuccio in his Pyrotechny affirmeth, have promiſed to make it red. All which notwithſtanding doth little concerne the report: for that as wee have ſhewed depends on an other ingredient; and therefore alſo under the colour of blacke; this principle is very variable, for it is made not onely by Willow, Aller, Hazell, &c. But ſome above all commend the coales of Flaxe and Ruſhes, and ſome alſo contend the ſame may bee effected with Tinder.

As for the other, that is, to deſtroy the Report, it is reaſonably attempted but two wayes; that is, either by quite leaving out, or elſe by ſilencing the Salt-peter. How to abate the vigour thereof, or ſilence its bombulation, a way is promiſed by Porta, and that not onely in generall termes by ſome fat bodies, but in particular by Borax and Butter mixed in a due proportion; which ſayeth he, will ſo goe off as ſcarce to be heard by the diſcharger; and indeed plentifully mixed, it will almoſt take off the reporr, and alſo the force of the charge. That it may be thus made without Salt-peter, I have met with but one example, that is, of Alphonſus Duke of Ferrara, who in the relation of Braſſavolus and Cardan invented ſuch a Powder, as would diſcharge a bullet without report.

That therefore white Powder there may be, there is therein no abſurdity, that alſo ſuch a one as may give no report, wee will not deny a poſſibility. But this however, contrived either with or without Salt-peter, will ſurely be of little force, and the effects thereof no way to be feared: For as it omits of report, ſo will it of effectuall excluſion; for ſeeing as we have delivered the ſtrength and report, do neceſſarily depend upon the violent excluſion, where there is no report there will be no violent exceluſion, and ſo the charge of no force which is excluded. For thus much is reported of that famous powder of Alphonſus, which was not of force enough to kill a chicken, according to the delivery of Braſſavolus. *Iamq; pulvis inventus eſt qui glandem ſine bombo projicit, nec tamen vehementer ut vel pullum interficere poſſit.*

It is very true and not to bee denyed, there are wayes to diſcharge a bullet, not only with powder that makes no noiſe, but without any powder at all, as is done by water and windegunnes; but theſe afford no fulminating report, and depend on ſingle principles, and even in ordinary powder there are pretended other wayes, to alter the noiſe and ſtrength of the diſcharge, and the beſt, if not onely way conſiſts in the quality of the Nitre: for as for other wayes which make either additions or alterations in the powder, or charge, I finde therein no effect. That unto every pound of ſulphur, an adjection of one ounce of

Quickſilver, or unto every pound of peter, one ounce of Sal Armoniac will much intend the force, and conſequently report, as Beringuccio hath delivered, I find no verity therein. That a piece of Opium will dead the force, and blow as ſome have promiſed, I finde herein no ſuch peculiarity, no more then in any gumme or viſcoſe body, and as much effect there is to be found from Scammonie. That a bullet dipped in oyle by preventing the tranſpiration of ayre, will carry farther, and peirce deeper, as Portu affirmeth, my experience cannot with ſatisfaction diſcerne. That Quickſilver is more diſtructive then ſhot is ſurely not to be made out; for it will ſcarce make any penetration, and diſcharged from a Piſtoll, will hardly pierce thorow a parchment. That vineger, ſpirits of wine, or the diſtilled water of Orange pilles, wherewith the powder is tempored, are more effectuall unto the report then common water, as ſome doe promiſe, I ſhall not affirme, but may aſſuredly be more conduceable unto the preſervation and durance of the powder, as Cataneo hath well obſerved.

But beſide the prevalent report from Salt-peter by ſome antipathie, or incummiſcibility therewith upon the approach of fire. Sulphur may hold a greater uſe in the compoſition and further activitie in the excluſion then is by moſt conceived; for ſulphur vive makes better powder then common ſulphur, which nevertheleſſe is of as quicke accenſion as the other; for Small-coale, Salt-peter and Camphire made into powder will bee of little force, wherein notwithſtanding there wants not the accending ingredient; for Camphire though it flame well, yet will not fluſh ſo lively, or defecate Salt-peter, if you inject it thereon like ſulphur, as in the preparation of *Sal prunellæ*. And laſtly, though many wayes may be found to light this powder, yet is there none I know to make a ſtrong and vigorous powder of Salt-peter, without the admixion of ſulphur. Arſenick red and yellow, that is, Orpement and Sandarach may perhaps doe ſomething, as being inflamable and containing ſulphur in them, but containing alſo a ſalt, and hydrargyrus mixtion, they will be of little effect; and white or Criſtaline arſenick of leſſe, for that being artficiall, and ſublimed with ſalt, will not endure flamation.

And this antipathy or contention between ſaltpeter and ſulphur upon an actuall fire, and in their compleat & diſtinct bodies, is alſo manifeſted in their preparations, and bodies which inviſibly containe them. Thus is the preparation of Crocus Metallorum, the matter kindleth and fluſheth like Gunpowder, wherein notwithſtanding, there is nothing but Antimony and Saltpeter, but this proceedeth from the ſulphur of Antimony, not enduring the ſociety of ſaltpeter; for after three or foure accenſions, through a freſh addition of peter, the powder will fluſh no more; for the ſulphur of the Antimony is quite exhaled. Thus Iron in *Aqua fortis* will fall into ebullition, with noiſe and

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emication, as alſo a craſſe and fumide exhalation, which are cauſed from this combat of the ſulphur of Iron, with the acide and nitrous ſpirits of Aqua fortis. So is it alſo in *Aurum fulminans*, or powder of gold diſſolved in *Aqua Regis*, and precipitated with oyle of Tartar, which will kindle without an actuall fire, and afford a report like Gunpowder, that is, not as Crollius affirmeth from any Antipothy betweene *Sal Armoniac* and Tartar, but rather betweene the nitrous ſpirits of *Aquæ Regis*, commixed *per minima* with the ſulphur of gold, as in in his laſt, *De conſenſu chymicorum &c.* Sennertus hath well obſerved.

6. That Corall (which is a Lithophyton or ſtone plant, and groweth at the bottome of the Sea) is ſoft under water, but waxeth hard as ſoone as it arriveth unto the ayre, although the aſſertion of Dioſcorides, Pliny, and conſequently Solinus, Iſidore, Rueus, and many others, and ſtands believed by moſt, we have ſome reaſon to doubt, not onely from ſo ſudden a petrifaction and ſtrange induration, not eaſily made out from the qualities of Ayre, but becauſe we finde it rejected by experimentall enquirers. Johannes Beguinus in his Chapter of the tincture of Corall, undertakes to cleere the world of this errour, from the expreſſe experiment of *Iohn Baptiſta de Nicole*, who was Overſeer of the gathering of Coral upon the Kingdome of Thunis. This Gentleman, ſaith he, deſirous to finde the nature of Corall, and to be reſolved how it groweth at the bottome of the Sea, cauſed a man to goe downe no leſſe then a hundred fathom into the Sea, with expreſſe to take notice whether it were hard or ſoft in the place where it groweth, who returning brought in each hand a branch of Corall, affirming it was as hard at the bottome, as in the ayre where he delivered it. The ſame was alſo confirmed by a triall of his owne, handling it a fathome under water before it felt the ayre. *Boetius de Boote* in his accurate Tract *De Gemmis*, is of the ſame opinion, not aſcribing its concretion unto the ayre, but the coagulating ſpirits of ſalt, and lapidificall juyce of the ſea, which entring the parts of that plant, overcomes its vegetability, and converts it into a lapideous ſubſtance, and this, ſaith he, doth happen when the plant is ready to decay; for all Corall is not hard, and in many concreted plants ſome parts remaine unpetrified, that is, the quick and livelier parts remaine as wood, and were never yet converted. Now that plants and ligneous bodies may indurate under water without approachment of ayre, we have experiment in Coralline, with many Coralloidall concretions, and that little ſtony plant which Mr. Johnſon nameth, *Hippuris coralloides*, and *Geſner foliis muſci Areneſis*; we have our ſelfe found in freſh water, which is the leſſe concretive portion of that element. We have alſo with us the viſible petrification of wood in many waters, whereof ſo much as is covered with water converteth into ſtone, as much as is above it and in the ayre retaineth the forme of wood, and continueth as before.

In the french Copy.

7. We are not thorowly resolved concerning Porcellane or Chyna dishes, that according to common beliefe they are made of earth, which lyeth in preparation about an hundred yeares under ground, for the relations thereof are not onely divers, but contrary, and Authors agree not herein. Guido Pancirollus will have them made of Egge shells, Lobster shells, and Gypsum layed up in the earth the space of 80. yeeres: of the same affirmation is Scaliger, and the common opinion of most. Ramuzius in his Navigations is of a contrary assertion, that they are made out of earth, not laid under ground, but hardened in the Sunne and winde, the space of fourty yeeres. But Gonzales *de Mendoza*, a man employed into Chyna, and with an honourable present, sent from Phillip the second King of Spain, hath upon ocular experience, delivered a way different from al these. For enquiring into the artifice thereof, hee found they were made of a Chalky earth, which beaten and steeped in water, affoordeth a cream or fatnesse on the top, and a grosse subsidence at the bottome; out of the cream or superfluitance, the finest dishes, saith he, are made; out of the residence thereof the courser; which being formed, they gild or paint, and not after an hundred yeares, but presently commit unto the furnace: And this, saith he, is knowne by experience, and more probable then what Odoardus Barbosa hath delivered, that they are made of shels, and buried under earth a hundred yeares: And answerable unto all points hereto, is the relation of Linschotten, a very diligent enquirer in his Orientall Navigations.

Now if any man enquire, why being so commonly made, and in so short a time, they are become so scarce, or not at all to be had, the answer is given by these last Relators, that under great penalties it is forbidden to carry the first sort out of the Countrey. And of those surely the properties must be verified, which by Scaliger and others are ascribed to China dishes, That they admit no poyson, That they strike fire, That they will grow hot no higher then the liquor in them ariseth. For such as passe amongst us, and under the name of the finest, will onely strike fire, but not discover Aconite Mercury, or Arsenick, but may be usefull in dissenteries, and fluxes beyond the other.

8. Lastly, he must have more heads then Janus, that makes out half of those vertues ascribed unto stones, and their not onely medicall, but Magicall proprieties, which are to be found in Authors of great name. In Psellus, Serapion, Evax, Albertus, Aleazar Marbodeus; in Maiolus, Rueus; Mylius, and many other.

Against poyson. Provoking urine. Against the falling-sickneſſe.

That Lapis Lazuli hath in it a purgative faculty we know, that Bezoar is Antidotall, Lapis Judaicus diureticall, Corall Antipileptical, we will not deny. That Cornelians, Jaspis, Heliotropes, and bloudstones, may be of vertue to those intentions they are implyed, experience and visible effects will make us doubt. But that an Amethist pre-

vents

vents inebriation, that an Emerald will breake if worne in copulation. That a Diamond laid under the pillow, will betray the incontinency of a wife. That a Saphyre is preſervative againſt enchantments; that the fume of an Agath will avert a tempeſt, or the wearing of a Cryſopraſe make one out of love with gold, as ſome have delivered, we are yet, I confeſſe to believe, and in that infidelity are likely to end our dayes. And therefore, they which in the explication of the two Beryls upon the Ephod, or the twelve ſtones in the Rationall or breaſt-plate of Aaron, or thoſe twelve which garniſhed the wall of the holy City in the Apocalyps, have drawne their ſignifications from ſuch as theſe, or declared their ſymbolicall verities from ſuch traditionall falſities, have ſurely corrupted the ſincerity of their Analogies, or miſunderſtood the myſtery of their intentions.

Chap. VI.

Of ſundry tenents concerning vegetables or Plants, which examined, prove either falſe or dubious.

1. MAny Mola's and falſe conceptions there are of Mandrakes, the firſt from great Antiquity, conceiveth the Roote thereof reſembleth the ſhape of man, which is a conceit not to be made out by ordinary inſpection, or any other eyes, then ſuch as regarding the clouds, behold them in ſhapes conformable to preapprehenſions.

Now what ever encouraged the firſt invention, there have not bin wanting many wayes of its promotion. The firſt a Catacreſticall and farre derived ſimilitude, it holds with man; that is, in a byfurcation or diviſion of the roote into two parts, which ſome are content to call thighes, whereas notwithſtanding they are oft times three, and when but two commonly ſo complicated and croſſed, that men for this deceit, are faine to effect their deſigne into other plants; And as faire a reſemblance is often found in Carrots, Parſenips, Bryony, and many others. There are, I confeſſe, divers plants which carry about them, not onely the ſhape of parts, but alſo of whole animals, but ſurely not all thereof, unto whom this conformity is imputed. Whoever ſhall peruſe the ſignatures of Crollius, or rather the phytognomy of Porta, and ſtrictly obſerves how vegetable realities, are commonly forced into Animall repreſentations, may eaſily perceive in very many, the ſemblance is but poſtulatory, and muſt have a more aſſimilating phancy then mine to make good many thereof.

Illiterate heads have bin led on by the name, which in the firſt ſillable expreſſeth its repreſentation; but others have better obſerved the laws of Etymology, and deduced it from a word of the ſame language, that is, μάνδρα, *ſpelunca*, becauſe it delighteth to grow in obſcure and ſhady

ſhady places, which derivation, although we ſhall not ſtand to maintaine, yet is the other openly abſurd, anſwerable unto the Etymologies of many Authors, who often confound ſuch nominall notations. Not to enquire beyond our owne profeſſion, the Latine Phyſitians, which moſt adheared unto the Arabick way, have often failed herein, particularly Valeſcus *de* Taranta a received Phyſitian, in whoſe Philonium or medicall practice theſe may be obſerved; Diarhæa ſaith he, *quia pluries venit in die. Heriſepela, quaſi hærens pilis, emorrohois, ab emach ſanguis & morrhois quod eſt cadere. Lithargia à Litos quod eſt oblivio & Targus morbus, Scotomia a Scotos quod eſt videre, & mias muſca, Opthalmia ab opus Græce quod eſt ſuccus, & Talmon quod eſt occulus, Paraliſis, quaſi laſio partis, Fiſtula à fos ſonus & ſtelon quod eſt emiſſio, quaſi emiſſio ſoni vel vocis*: which are derivations as ſtrange indeed as the other, and hardly to be paralleld elſewhere, confirming not onely the words of one language with another, but creating ſuch as were never yet in any.

The received diſtinction and common notation by ſexes, hath alſo promoted the conceit; for true it is, that Herbaliſts from ancient times, have thus diſtinguiſhed them; naming that the maſle, whoſe leaves are lighter, and fruit and apples rounder, but this is properly no generative diviſion, but rather ſome note of diſtinction in colour, figure or operation. For though Empedocles affirme, there is a mixt, and undivided ſex in vegetables; and Scaliger upon Ariſtotle *de plantis*, doth favourably explain that opinion, yet will it not conſiſt with the common and ordinary acception, nor yet with Ariſtotles definition: for if that be maſle which generates in another, that female which procreates in it ſelfe; if it be underſtood of ſexes conjoyned, all plants are female, and if of diſ joyned, and congreſſive generation, there is no male or female in them at all.

But the Atlas or maine axis, which ſupported this opinion, was daily experience, and the viſible teſtimony of ſenſe; for many there are in ſeverall parts of Europe who carry about, and ſell rootes unto ignorant people, which handſomely make out the ſhape of man or woman, but theſe are not productions of Nature, but contrivances of Art, as divers have noted, and Mathiolus plainly detected, who learned this way of trumpery from a vagabond cheator lying under his cure for the French diſeaſe; his words are theſe, and may determine the point, *Sed profecto vanum & fabuloſum, &c.* But that is vaine and fabulous which ignorant people, and ſimple women beleeve; for the roots which are carried about by impoſtors to deceive unfruitfull women, are made of the roots of Canes, Bryony, and other plants; for in theſe yet freſh and virent, they carve out the figures of men and women, firſt ſticking therein the graines of barley or millet, where they intend the haire ſhould grow, then bury them in ſand, untill the grains

ſhoot

ſhoot forth their roots, which at the longeſt will happen in twenty dayes; afterward clip and trim thoſe tender ſtrings in the faſhion of beard and other hayrie teguments. All which like other impoſtures once diſcovered is eaſily effected, and in the root of white Bryony may be practiſed every ſpring.

What is there fore delivered in favour hereof, by Authors ancient or moderne, muſt have its root in tradition, impoſture, or farre derived ſimilitude; ſo may we admit of the epithyte of Pythagoras who calls it ἀνθρωπόμορφος, and that of Columella, who tearms it *ſemihomo*, otherwiſe Albertus *magnus* is not to be received when he affirmeth that Mandrakes ſo repreſent mankinde, that diſtinction of ſex and other accidents are manifeſt therein. And under theſe tearms may thoſe Authors bee admitted, which for this opinion are introduced by Druſius, as David Camius, Moſes filius Namanis, and Abenezra Hiſpanus.

The ſecond aſſertion concerneth its production, That it naturally groweth under gallowſes and places of execution, ariſing from fat or urine that drops from the body of the dead; a ſtory ſomewhat agreeable unto the fable of the Serpents teeth ſowed in the earth by Cadmus, or rather the birth of Orion from the urine of Jupiter, Mercurie, and Neptune: Now this opinion ſeems grounded on the former, that is a conceived ſimilitude it hath with man; and therefore from him in ſome way they would make out its production. Which conceit is not only erroneous in the foundation, but injurious unto Philoſophy in the ſuperſtruction, making putrifactive generations; correſpondent unto ſeminall productions, and conceiving in equivocall effects and univocall conformity unto the efficient; which is ſo far from being verified of animalls in their corruptive mutations into plants, that they maintaine not this ſimilitude in their nearer tranſlation into animalls. So when the Oxe corrupteth into Bees, or the Horſes into hornets, they come not forth in the image of their originalls. So the corrupt and excrementous humors in man are animated into lyce; and we may obſerve that hogs, ſheep, goats, hawkes, hens, and divers other, have one peculiar and proper kind of vermine, not reſembling themſelves according to ſeminall conditions, it carrying a ſetled and confined habitude unto their corruptive originalls; and therefore come not forth in generations erraticall, or different from each other, but ſeem ſpecifically and in regular ſhapes to attend the corruption of their bodyes, as doe more perfect conceptions, the rule of ſeminall productions.

The third affirmeth the roots of Mandrakes doe make a noyſe or give a ſhreeke upon eradication, which is indeed ridiculous, and falſe below confute; ariſing perhaps from a ſmall and ſtridulous noyſe, which being firmely rooted, it maketh upon divulſion of parts. A ſlender foundation for ſuch a vaſt conception: for ſuch a noyſe we ſometime

time observe in other plants, in parsenips, liquoriſh, eringium, flags, and others.

The laſt concerneth the danger enſuing, that there followes an hazard of life to them that pull it up, that ſome evill fate purſues them, and they live not very long after; therefore the attempt hereof among the Ancients, was not in ordinary way, but as Pliny informeth, when they intended to take up the root of this plant, they tooke the wind thereof, and with a ſword deſcribing three circles about it they digged it up, looking toward the Weſt, a conceit not only injurious unto truth, and confutable by dayly experience, but ſomewhat derogatory unto the providence of God, that is not only to impoſe ſo deſtructive a quality on any plant, but conceive a vegetable whoſe parts are uſefull unto many, ſhould in the only taking up prove mortall unto any. To think he ſuffereth the poyſon of Nubia to be gathered, Napellus, Aconite and Thora to be eradicated, yet this not to be moved. That hee permitteth Arſenick and minerall poyſons to be forced from the bowells of the earth, yet not this from the ſurface thereof. This were to introduce a ſecond forbidden fruit, and inhance the firſt malediction; making it not only mortall for Adam to taſte the one, but capitall unto his poſterity to eradicate or dig up the other.

Now what begot, at leaſt promoted ſo ſtrange conceptions might be the magicall opinion hereof; this being conceived the plant ſo much in uſe with Circe, and therefore named Circea, as Diolcorides and Theophraſtus have delivered; which being the eminent ſoceres of elder ſtory, and by the magicke of ſimples beleeved to have wrought many wonders, ſome men were apt to invent, others to beleeve any tradition or magicall promiſe thereof.

Analogus relations concerning other plants, and ſuch as are of neare affinity unto this, have made its currant ſmooth, and paſſe more eaſily among us; for the ſame effect is alſo delivered by Joſephus, concerning the root Baaras, by Ælian of Cynoſpaſtus, and we read in Homer the very ſame opinion concerning Moly.

Μῶλυ δε μὲν καλέουσι, θεοὶ καλεπὴν δε τ' ὀρύσσειν
Ανδράσι γε θνητοῖσι· θεοὶ δε τε πάντα δύνανται.

The Gods it Moly call, whoſe root to dig away,
Is dangerous unto man, but Gods they all things may.

Now parallels or like relations alternately releeve each other; when neither will paſſe aſunder, yet are they plauſible together, and by their mutuall concurrences ſupport their ſolitary inſtablilities.

Signaturiſts have ſomewhat advanced it, who ſeldome omitting what Ancients delivered, drawing into inference received diſtinctions of ſex, not willing to examine its humane reſemblance, and placing it in the forme of ſtrange and magicall ſimples, have made men ſuſpect there was more therein, then ordinary practice allowed, and ſo became

came apt to embrace what ever they heard or read conformable unto ſuch conceptions.

Laſtly, the conceit promoteth it ſelfe: for concerning an effect whoſe triall muſt coſt ſo deare, it fortifies it ſelfe in that invention, and few there are whoſe experiment it need to feare. For (what is moſt contemptible) although not only the reaſon of any head, but experience of every hand may well convict it, yet will it not by divers bee rejected, for prepoſſeſſed heads will ever doubt it, and timorous beliefes will never dare to try it. So theſe traditions how low and ridiculous ſoever, will finde in ſome ſuſpition, doubt in others, and ſerve as teſts or trialls of melancholy, and ſuperſtitious tempers for ever.

2. That Cinamon, Ginger, Clove, Mace and Nutmeg, are but the ſeverall parts and fruits of the ſame tree, is the common beliefe of thoſe which daily uſe them; whereof to ſpeak diſtinctly, Ginger is the root of neither tree nor ſhrub, but of an herbaceous plant, reſembling the water flower De luce, as Garcias firſt deſcribed, or rather the common reed, as Lobelius ſince affirmed, very common in many parts of India, growing either from root or ſeed, which in December and January they take up, and gently dryed, role it up in earth, whereby occluding the pores, they conſerve the naturall humidity, and ſo prevent corruption.

Cinnamon is the inward barke of a Cinnamon tree, whereof the beſt is brought from Zeilan; this freed from the outward barke, and expoſed unto the Sun, contracts into thoſe folds wherein we commonly receive it. If it have not a ſufficient inſolation it looketh pale, and attaines not its laudable colour, if it be ſunned too long it ſuffereth a torrefaction, and deſcendeth ſomewhat below it.

Clove is the rudiment or beginning of a fruit growing upon the Clove tree, to be found but in few Countries. The moſt commendable is that of Iſles of Molucca; it is firſt white, afterward green, which beaten downe, and dryed in the Sun becommeth blacke, and in the complexion we receive it.

Nutmeg is the fruit of a tree differing from all theſe, and as Garcias deſcribeth it, ſomewhat like a Peach, growing in divers places, but fructifying in the Iſle of Banda. The fruit hereof, conſiſteth of foure parts; the firſt or outward part is a thick and carnous covering like that of a Walnut. The ſecond a dry and floſculous coat, commonly called Mace. The third a harder tegument or ſhell, which lyeth under the Mace. The fourth a kernell included in the ſhell, which is the ſame we call Nutmeg; all which both in their parts and order of diſpoſure, are eaſily diſcerned in thoſe fruits, which are brought in preſerves unto us.

Now if becauſe Mace and Nutmegs proceed from one tree, the reſt muſt beare them company, or becauſe they are all from the Eaſt-

Indies, they are all from one plant, the Inference is precipitous, nor will there ſuch a plant be found in the Herball of Nature.

3. That Viſcus Arboreus or Miſſeltoe is bred upon trees, from ſeeds which birds, eſpecially Thruſhes and Ringdoves let fall thereon, was the creed of the Ancients, and is ſtill beleeved among us, is the account of its production, ſet downe by Pliny, delivered by Virgil, and ſubſcribed by many more. If ſo, ſome reaſon muſt be aſſigned, why it groweth onely upon certaine trees, and not upon many whereon theſe birds do light. For as Exotick obſervers deliver, it groweth upon Almond trees, Cheſnut, Apples, Oakes, and Pine trees, as wee obſerve in England, very commonly upon Apple, Holly, Bayes, Crabs, and White thorne, ſometimes upon Sallow, Haſell, and Oake, never upon Bayes, Holly, Aſhes, Elmes, and many others. Why it groweth not in all countries and places where theſe birds are found, for ſo Braſſavolus affirmeth, it is not to be found in the territorie of Ferrara, and was faine to ſupply himſelfe from other parts of Italy. Why if it ariſeth from a ſeed, if ſowne it will not grow againe, as Pliny affirmeth, and as by ſetting the berryes thereof, wee have in vaine attempted its production; why if it commeth from ſeed that falleth upon the tree, it groweth often downewards and puts forth under the bough, where ſeed can neither fall, nor yet remaine. Hereof beſide ſome others, the Lord Verulam hath taken notice. And they ſurely ſpeake probably who make it an arboreous excreſcence, or rather ſuperplant, bred of a viſcous and ſuperfluous ſappe the tree it ſelfe cannot aſſimilate, and therefore ſprouteth not forth in boughs and ſurcles of the ſame ſhape and ſimilary unto the tree that beareth it, but in a different forme, and ſecondary unto its ſpecificall intention, wherein once fayling, another forme ſucceedeth, and in the firſt place that of Miſſeltoe, in plants and trees diſpoſed to its production. And therefore alſo where ever it groweth, it is of conſtant ſhape, and maintaines a regular figure like other ſupercreſcenſes, and ſuch as living upon the ſtock of others, are termed Paraſiticall plants, as Polypody, Moſſe, the ſmaller Capillaries, and many more.

Now what begot this conceit, might be the enlargement of that part of truth conteined in its ſtory. For certaine it is, that ſome birdes doe feed upon the berries of this vegetable, and we meet in Ariſtotle with one kind of thruſh called ἰξοφάγος, the miſſell thruſh or feeder upon miſſeltoe. But that which hath moſt promoted it, is a received proverb. *Turdus ſibi malum cacat*; Appliable unto ſuch men as are authors of their owne misfortune: For according unto ancient tradition and Plinies relation, the bird not able to digeſt the fruit whereon ſhee feedeth, from her inconverted muting, ariſeth this plant, of the berries whereof birdlime is made, wherewith ſhe is after entangled. Now although proverbs bee popular principles, yet is not all true that is proverbiall,

verbiall; and in many thereof there being one thing delivered, and another intended, though the verball expreſſion be falſe, the proverbe is true enough in the veritie of its intention.

As for the Magicall vertues in this plant, and conceived efficacie unto veneficiall intentions, it ſeemeth unto me a Pagan relique derived from the ancient Druides, the great admirers of the Oake, eſpecially the Miſſeltoe that grew thereon; which according unto the particular of Plinie, they gathered with great ſolemnitie. For after ſacrifice the prieſt in a white garment, aſcended the tree, cut downe the Miſſeltoe with a golden hooke, and received it in a white coat, the vertue whereof was to reſiſt all poyſons, and make fruitfull any that uſed it. Vertues not expected from Claſſicall practiſe; And did they anſwer their promiſe which are ſo commended, in Epilepticall intentions, wee would abate theſe qualities. Countrey practiſe hath added another, to provoke the after-birth, and in that caſe the decoction is given unto Cowes. That the berries are poiſon as ſome conceive, we are ſo far from averring, that we have ſafely given them inwardly, and can confirme the experiment of Braſſavolus, that they have ſome purgative quality.

4. The Roſe of Jerico, that flouriſhes every yeer juſt upon Chriſtmas Eve is famous in Chriſtian reports, which notwithſtanding wee have ſome reaſon to doubt; and we are plainely informed by Bellonius, it is but a Monaſticall impoſture, as hee hath delivered in his obſervations, concerning the plants in Jericho. That which promoted the conceit, or perhaps begot its continuance, was a proprietie in this plant. For though it bee dry, yet will it upon imbibition of moiſture dilate its leaves, and explicate its flowers contracted, and ſeemingly dryed up. And this is to bee effected not onely in the plant yet growing, but in ſome manner alſo in that which is brought exuccous and dry unto us. Which quality being obſerved, the ſubtilty of contrivers did commonly play this ſhew upon the Eve of our Saviours Nativitie, and by drying the plant againe, it cloſed the next day, and ſo pretended a double myſtery. That is the opening and cloſing of the wombe of Mary.

There wanted not a ſpecious confirmation from a text in Eccleſiaſticus, chap. 24. *Quaſi palma exaltata ſum in Cades & quaſi plantatio Roſæ in Iericho:* I was exalted like a Palme tree in Engaddi, and as a Roſe in Jericho. The ſound whereof in common eares, begat an extraordinary opinion of the Roſe of that denomination. But herein there ſeemeth a great miſtake; for by the Roſe in the text, is implyed the true and proper Roſe φύτον τῆς ῥόδης ſayth the Greek, and ours accordingly rendreth it. But that which paſſeth under this name, and by us is commonly called the Roſe of Jericho, is properly no Roſe, but a ſmall thorny ſhrub or kinde of heath, bearing little white flowers, far

differing from the Rose, whereof Bellonius a very inquisitive Herbalist could not finde any in his travells thorow Jericho. A plant so unlike a Rose, it hath been mistaken by some good Simplist for Amomum, which truely understood is so unlike a Rose, that as Dioscorides delivers, the flowers thereof, are like the white violet, and its leaves resemble Bryonie; sutable unto this relation almost in all points is that of the thorne at Glassenbury, and perhaps the daughter thereof; herein our endeavours as yet have not attained satisfaction, and cannot therefore enlarge. Thus much in generall we may observe, that strange effects, are naturally taken for miracles by weaker heads, and artificially improved to that apprehension by wiser.

5. That *ferrum Equinum*, or *Sferra Cavallo* hath a vertue attractive of Iron, a power to breake lockes, and draw off the shooes of a horse that passeth over it. Whether you take it for one kinde of Securidaca, or will also take in Lunaria, we know it to be false; and cannot but wonder at Mathiolus, who upon a parallell in Plinie was staggered into suspension; who notwithstanding in the imputed vertue to open things, close and shut up, could laugh himselfe at that promise from Æthiopis, and condemne the judgement of Scipio, who having such a picklock, would spend so many years in battering the gates of Carthage. Which strange and Magicall conceit, seemes unto me to have no deeper root in reason, then the figure of its seed; for therein indeed it somewhat resembles an horseshooe, which notwithstanding *Baptista Porta* hath thought too low a signation, and raised the same unto a Lunarie representation.

6. That Bayes will protect from the mischief of lightning and thunder, is a qualitie ascribed thereto, common with the figtree, Ægle, and skin of a Seale. Against so famous a quality, Vicomercatus produceth experiment of a Bay tree blasted in Italy, and therefore although Tiberius for this intent, did weare a Laurell about his temples. Yet did Augustus take a more probable course, who fled under arches and hollow vautes for protection. And though Porta conceive, because in a streperous eruption, it riseth against fire, it doth therefore resist lightning, yet is that no emboldning Illation: And if wee consider the threefold effect of Jupiters Trisulke, to burne, discusse and terebrate; and if that be true which is commonly delivered, that it will melt the blade, yet passe the scabbard, kill the childe, yet spare the mother, dry up the wine, yet leave the hogshead intire; though it favour the amulet it may not spare us; it will be unsure to rely on any preservative, tis no security to be dipped in Styx, or clad in the armour of Ceneus. Now that beer, wine, and other liquors, are spoyled with lightning and thunder, we conceive it proceeds not onely from noyse and concussion of the ayre, but also noxious spirits, which mingle therewith, and draw them to corruption, whereby they become not onely dead themselves, but

but ſometime deadly unto others, as that which Seneca mentioneth, whereof whoſoever dranke, either loſt his life, or elſe his wits upon it.

7. It hath much deceived the hopes of good fellowes, what is commonly expected of bitter Almonds, and though in Plutarch confirmed from the practiſe of Claudius his Phyſitian, that Antidote againſt ebriety hath commonly failed. Surely men much verſt in the practice doe erre in the theory of inebriation, conceaving in that diſturbance the braine doth onely ſuffer from exhalations and vaporous aſcentions from the ſtomack, which fat and oylie ſubſtances may ſuppreſſe, whereas the prevalent intoxication is from the ſpirits of drink diſperſed into the veynes and arteries, from whence by common conveyances they creep into the braine, inſinuate into its ventricles, and beget thoſe vertigoes, accompanying that perverſion. And therefore the ſame effect may be produced by a Gliſter, the head may be intoxicated by a medicine at the heele. And ſo the poyſonous bytes of Serpents, although on parts at diſtance from the head, yet having entered the veynes, diſturbe the animall faculties, and produce the effects of drink, or poyſon ſwallowed. And ſo as the head may bee diſturbed by the skin, it may the ſame way be relieved, as is obſervable in balneations, waſhings, and fomentations, either of the whole body, or of that part alone.

8. That every plant might receive a name according unto the diſeaſe it cureth, was the wiſh of Paracelſus; a way more likely to multiply Empericks then Herbaliſts, yet what is practiſed by many is advantageous unto neither; that is, relinquiſhing their proper appellations, to re-baptiſe them by the name of Saints, Apoſtles, Patriarcks and Martyres, to call this the herbe of John, that of Peter, this of James or Joſeph, that of Mary or Barbara, for hereby apprehenſions are made additionall unto their proper natures; whereon ſuperſtitious practiſes enſue, and ſtories are framed accordingly to make good their foundations.

9. We cannot omit to declare the groſſe miſtake of many in the nominall apprehenſion of plants; to inſtance but in few. An herbe there is commonly called Betonica Pauli, or Pauls Betony, hereof the people have ſome conceit in reference to S. Paul, whereas indeed that name is derived from Paulus Ægineta, an ancient Phyſitian of Ægina, and is no more then ſpeed well, or Fluellen. The like expectations are raiſed from *Herba Trinitatis*, which notwithſtanding obtaineth that name onely from the figure of its leaves, and is one kinde of liverworte or Hepatica. In *Milium Solis*, the epithite of the Sun hath enlarged its opinion, which hath indeed no reference thereunto, it being no more then Lithoſpermon, or grummell, or rather *Milium Soler*, which as Serapion from Aben Juliel hath taught us, becauſe it grew plentifully in the mountaines of Solar, received that appellation. In Jews eares

ſome thing is conceived extraordinary from the name, which is in propriety but *Fungus ſambucinus*, or an excreſcence about the roots of Elder, and concerneth not the Nation of the Jews, but Judas Iſcariot, upon a conceit, he hanged on this tree, and is become a famous medicine in Quinſes, ſore throats, and ſtrangulations ever ſince. And ſo are they deceived in the name of Horſe-raddiſh, Horſe-mint, Bull-ruſh, and many more: conceiving therein ſome prenominall conſideration, whereas indeed that expreſſion is but a Greciſme, by the prefix of Hippos and Bous, that is, Horſe and Bull, intending no more then great. According whereto the great dock is called Hippolapathum; and hee that calls the horſe of Alexander great head, expreſſeth the ſame which the Greeks do in Bucephalus.

10. Laſtly, many things are delivered and believed of other plants, wherin at leaſt we cannot but ſuſpend. That there is a property in Baſil to propagate Scorpions, and that by the ſmell thereof they are bred in the braines of men, is much advanced by Hollerius, who found this inſect in the braines of a man that delighted much in this ſmel. Wherein beſide that wee finde no way to conjoyne the effect unto the cauſe aſſigned; herein the Modernes ſpeake but timerouſly, and ſome of the Ancients quite contrarily. For, according unto Oribaſius, Phyſition unto Julian, The Affricans, men beſt experienced in poyſons, affirme whoſoever hath eaten Baſil, although hee be ſtung with a Scorpion, ſhall feele no paine thereby: which is a very different effect, and rather antidotally deſtroying then ſeminally promoting its production.

That the leaves of Cataputia or ſpurge being plucked upward or downeward reſpectively performe their operations by purge or vomit, as ſome have written, and old wives ſtill do preach, is a ſtrange conceit, and indeed ſomewhat magneticall, aſcribing unto plants poſitionall operations, and after the manner of the Loadſtone, upon the pole whereof if a knife be drawne from the handle unto the poynt, it will take up a neele, but if drawne againe from the point to the handle, it will attract it no more.

That an Ivy cup will ſeparate wine from water, if filled with both, the wine ſoaking through, but the water ſtill remaining, as after Pliny many have averred wee know not how to affirme, who making tryall thereof, found both the liquors to ſoake indiſtinctly through the bowle.

That Ros ſolis which rotteth ſheepe hath any ſuch cordiall vertue upon us, we have ſome reaſon to doubt.

That Flos Affricanus is poyſon, and deſtroyeth dogs, in two experiments we have not found.

That Yew and the berries thereof are harmeleſſe we know.

That a Snake will not endure the ſhade of an Aſhe we can deny.

That Cats have ſuch delight in the herbe Nepeta, called therefore Cattaria,

Cattaria, our experience cannot discover. Nor is it altogether inconsiderable what is affirmed by Bellonius; for if his assertion bee true in the first of his observations, our apprehension is oftentimes wide in ordinary simples, and in common use wee mistake one for another. We know not the true thime, the savory in our Gardens is not that commended of old, and that kinde of hyssop the Ancients used, is unknown unto us who make great use of another.

Wee omit to recite the many vertues, and endlesse faculties ascribed unto plants, which sometime occure in grave and serious Authors, and wee shall make a bad composition for truth to concede a verity in halfe. To reckon up all, it were imployment for Archimedes, who undertooke to write the number of the sands. Swarmes of others there are, some whereof our future endeavours may discover; common reason I hope will save us a labour in many, whose absurdities stand naked unto every eye, errours not able to deceive the Emblem of Justice, and need no Argoes to descry them. Herein there surely wants expurgatory animadversions, whereby wee might strike out great numbers of hidden qualities, and having once a serious and conceded list, wee might with more encouragement and safety, attempt their Reasons.

THE

THE THIRD BOOK.

Of divers popular and received Tenents concerning Animals, which examined, prove either false or dubious.

CHAP. I.

Of the Elephant.

THE first shall be of the Elephant, whereof there generally passeth an opinion it hath no joynts; and this absurdity is seconded with another, that being unable to lye downe, it sleepeth against a tree, which the Hunters observing doe saw almost asunder; whereon the beast relying, by the fall of the tree falls also down it selfe, and is able to rise no more; which conceit is not the daughter of latter times, but an old and gray-headed errour, even in the dayes of Aristotle, as he delivereth in his booke, *de incessu animalium*, and stands successively related by severall other Authors, by Diodorus Siculus, Strabo, Ambrose, Cassiodore, Solinus, and many more: Now herein me thinks men much forget themselves, not well considering the absurditie of such assertions.

For first, they affirme it hath no joynts, and yet concede it walks and moves about; whereby they conceive there may be a progression or advancement made in motion without the inflexion of parts: Now all progression or animall locomotion being (as Aristotle teacheth) performed *tractu & pulsu*; that is by drawing on, or impelling forward some part which was before in station, or at quiet; where there are no joynts or flexures, neither can there be these actions; and this is true, not only in Quadrupedes, Volatills and Fishes, which have distinct and prominent organs of motion, legs, wings, and fins; but in such also as performe their progression by the truncke, as serpents, wormes and leeches; whereof though some want bones, and all extended articulations, yet have they arthriticall analogies, and by the motion of fibrous

and

and musculous parts, are able to make progression; which to conceive in bodies inflexible, and without all protrusion of parts, were to expect a race from Hercules his pillars, or hope to behold the effects of Orpheus his harpe, when Trees found legges, and danced after his musicke.

Againe, while men conceive they never lye downe, and enjoy not the position of rest, ordained unto all pedestrious animalls whatsoever, hereby they imagine (what reason cannot conceive) that an animall of the vastest dimension and longest duration should live in a continuall motion, without that alternity and vicissitude of rest whereby all others continue; and yet must thus much come to passe, if wee opinion they lye not downe and enjoy no decumbence at all; for station is properly no rest, but one kinde of motion, relating unto that which Physitians (from Galen) doe name extensive or tonicall, that is an extension of the muscles and organs of motion maintaining the body at length or in its proper figure, wherein although it seem to be immoved is nevertheless without all motion, for in this position the muscles are sensibly extended, and labour to support the body, which permitted unto its proper gravity would suddenly subside and fall unto the earth, as it happeneth in sleep, diseases and death; from which occult action and invisible motion of the muscles in station (as Galen declareth) proceed more offensive lassitudes then from ambulation; and therefore the Tyranny of some have tormented men, with long and enforced station, and though Ixion and Sisiphus which alwaies moved, doe seem to have the hardest measure, yet was not Titius favoured, that lay extended upon Caucasus, and Tantalus suffered somewhat more then thirst, that stood perpetually in hell; and thus Mercurialis in his Gymnasticks justly makes standing one kinde of exercise, and Galen when we lye downe, commends unto us middle figures; that is, not to lye directly, or at length, but somewhat inflected, that the muscles may be at rest; for such as he termeth Hypobolemaioi or figures of excesse, either shrinking up or stretching out, are wearisome positions, and such as perturbe the quiet of those parts.

Moreover men herein doe strangely forget the obvious relations of history, affirming they have no joynts, whereas they dayly read of severall actions which are not performable without them. They forget what is delivered by Xiphilinus, and also by Suetonius in the lives of Nero and Galba, that Elephants have been instructed to walke on ropes, and that in publicke shews before the people; which is not easily performed by man, and requireth not only a broad foot, but a plyable flexure of joynts, and commandible disposure of all parts of progression; they passe by that memorable place in Curtius, concerning the Elephant of King Porus, *Indus qui Elephantem regebat, descendere eum ratus, more solito procumbere jussit in genua, cæteri queque (ita enim*

instituti erant) demisere corpora in terram; they remember not the expression of *Osorius de rebus gestis Emanuelis*, when he speakes of the Elephant presented to Leo the tenth, *Pontificem ter genibus flexis, & demisso corporis habitu venerabundus salutavit*: But above all, they call not to minde that memorable shew of Germanicus, wherein twelve Elephants danced unto the sound of musick, and after laid them down in the Tricliniums, or places of festivall Recumbency.

Lastly, they forget or consult not experience, whereof not many yeares past, we have had the advantage in England, by an Elephant shewne in many parts thereof, not only in the posture of standing, but kneeling and lying downe; whereby although the opinion at present be reasonable well suppressed, yet from the strings of tradition and fruitfull recurrence of error, it is not improbable, it may revive in the next generation againe; for this was not the first that hath been seen in England, for (besides some others since) as Polydore Virgil relateth, Lewis the French King sent one to Henry the third; and Emanuel of Portugall another unto Leo the tenth into Italy, where notwithstanding the errour is still alive and epidemicall, as with us.

The hint and ground of this opinion might be the grosse and somewhat Cylindricall composure of the legs, the equality and lesse perceptible disposure of the joynts, especially in the fore legs of this Animall, they appearing when he standeth like pillars of flesh, without any evidence of articulation: the different flexure and order of the joynts might also countenance the same, being not disposed in the Elephant, as they are in other quadrupedes, but carry a nearer conformity into those of man, that is the bought of the fore legs not directly backward, but laterally and somewhat inward, but the hough or suffraginous flexure behinde rather outward, contrary unto many other Quadrupedes, and such as can scratch the eare with the hinder foot, as Horses, Camells, Deere, Sheep and Dogs, for their fore legs bend like our legs, and their hinder legs like our armes, when we move them to our shoulders; but quadrupedes oviparous, as Frogs, Lizards, Crocodiles, have their joynts and motive flexures more analogously framed unto ours; and some among viviparous, that is such thereof as can bring their forefeet and meat therein into their mouths, as most can doe that have the clanicles or coller-bones, whereby their breasts are broader, and their shoulders more asunder, as the Ape, the Monkey, the Squirrell, and some others: If therefore any shall affirme the joynts of Elephants are differently framed from most of other Quadrupedes, and more obscurely and grossely almost then any, he doth herein no injury unto truth; but if *à dicto secundum quid ad dictum simpliciter*, he affirmeth also they have no articulations at all, he incurs the controlment of reason, and cannot avoid the contradiction of sense.

As for the manner of their venation, if we consult historicall experience,

rience, we ſhall find it to be otherwiſe then as is commonly preſumed, by fawing away of trees; the accounts whereof are to be ſeen at large in *Iohannes Hugo, Edwardus Lopez, Garcias ab Horto, Cadamuſtus*, and many more: other concernments there are of the Elephant, which might admit of diſcourſe, and if we ſhould queſtion the teeth of Elephants, that is whether they be properly ſo termed, or might not rather be called hornes, it were no new enquiry of mine, but a paradox as old as Oppianus: whether as Pliny and divers ſince affirme, that Elephants are terrified, and make away upon the grunting of Swine, *Garcias ab Horto* may decide, who affirmeth upon experience they enter their ſtalles, and live promiſcuouſly in the woods of Malavar; That the ſituation of the genitalls is averſe, and their copulation like that of Camells, as Pliny hath alſo delivered, is neither to be received, for we have beheld that part in a different poſition, and their coition is made by ſuperſaliency like that of horſes, as we are informed by ſome who have beheld them in that act. That ſome Elephants have not only written whoſe ſentences, as Ælian ocularly teſtifieth, but have alſo ſpoken, as Oppianus delivereth, and Chriſtophorus a Coſta particularly relateth, although it ſound like that of Achilles horſe in Homer, wee doe not conceive impoſſible; nor beſide the affinity of reaſon in this Animall any ſuch intolerable incapacity in the organs of divers other Quadrupedes, whereby they might not be taught to ſpeake, or become imitators of ſpeech like birds; and indeed ſtrange it is how the curioſity of men that have been active in the inſtruction of beaſts, have never fallen upon this artifice, and among thoſe many paradoxicall and unheard of imitations, ſhould not attempt to make one ſpeak; the Serpent that ſpake unto Eve, the Dogs & Cats, that uſually ſpeak unto Witches, might afford ſome encouragement, and ſince broad and thick chops are required in birds that ſpeake, ſince lips and teeth are alſo organs of ſpeech; from theſe there is alſo an advantage in quadrupedes, and a proximity of reaſon in Elephants and Apes above them all.

Chap. II.

Of the Horſe.

THE ſecond Aſſertion, that an Horſe hath no gall, is very generall, nor onely ſwallowed by the people, and common Farriers, but alſo received by good Veterinarians, and ſome who have laudably diſcourſed upon Horſes, it ſeemeth alſo very ancient; for it is plainly ſet downe by Ariſtotle, an Horſe and all Solipeds have no gall; and the ſame is alſo delivered by Plinie, which notwithſtanding we finde repugnant unto experience and reaſon; for firſt, it calls in queſtion the providence or wiſe proviſion of nature, who not abounding in ſuper-

fluities, is neither deficient in neceſſities, wherein nevertheleſſe there would be a maine defect, and her improviſion juſtly accuſable, if ſuch a feeding Animall, and ſo ſubject unto diſeaſes from bilious cauſes, ſhould want a proper conveyance for choler, or have no other receptacle for that humor, then the veynes, and generall maſſe of bloud.

It is againe controulable by experience; for we have made ſome ſearch and enquiry herein, encouraged by Abſyrtus a Greek Author, in the time of Conſtantine, who in his Hippiaticks, obſcurely aſſigneth the gall a place in the liver: but more eſpecially by Ruino the Bononian, who in his *Anatomia del Cavallo*, hath more plainly deſcribed it, and in a manner as I found it; for in the diſſections of Horſes, and particular enquiry into that part, in the concave or ſimous part of the liver, whereabout the gall is uſually ſeated in quadrupeds, I diſcover an hollow, long and membranous ſubſtance of a yellow colour without, and lined with choler and gall within; which part is by branches diffuſed into the lobes and ſeverall parcells of the liver, from whence receiving the firie ſuperfluity, or cholericke remainder, upon the ſecond concoction by a manifeſt and open paſſage, it conveyeth it into the duodenum or upper gut, thence into the lower bowells, which is the manner of its derivation in man and other animalls; and therefore although there be no eminent and circular follicle, no round bagge or veſicle which long containeth this humor, yet is there a manifeſt receptacle and paſſage of choler, from the liver into the guts; which being not ſo ſhut up, or at leaſt not ſo long detained, as it is in other animalls, procures that frequent excretion, and occaſions the horſe to dung more often then many other; for choler is the naturall gliſter, or one excretion whereby nature excludeth another, which deſcending daily into the bowells, extimulates thoſe parts, and excites them unto expulſion; and ſo when this humor aboundeth or corrupteth, there ſucceeds oft-times a *cholerica paſſio*, that is a ſudden and vehement purgation upward and downward; and ſo when the paſſage of gall becomes obſtructed, the body grows coſtive, and the excrements of the belly white, as it happeneth oft-times in the Jaundice.

If any therefore affirme an horſe hath no gall, that is, no receptacle, or part ordained for the ſeparation of choller, or not that humour at all, he hath both ſence and reaſon to oppoſe him; but if he ſaith it hath no bladder of gall, and ſuch as is obſerved in many other animals, we ſhall oppoſe our ſenſe if we gaineſay him; and thus muſt Ariſtotle be made out when he denyeth this part, and by this diſtinction wee may relieve Pliny of a contradiction; who in one place affirming an horſe hath no gall, delivereth yet in another, that the gall of an horſe was accounted poyſon, and therefore at the ſacrifices of horſes in Rome, it was unlawfull for the Flamen but to touch it; but with more difficulty, or hardly at all is that reconcilable which is delivered by our Countrey-

man,

man, and received veterinarian, whose words in his master-piece, and Chapter of diseases from the gall, are somewhat too strict, and scarce admit a Reconciliation. The fallacy therefore of this conceit is not unlike the former, *A dicto secundum quid ad dictum simpliciter*, because they have not a bladder of gall, like those we usually observe in others, they have no gall at all; which is a Paralogisme not admittible, a fallacy that dwels not in a cloud, and needs not the Sun to scatter it.

Chap. III.

Of the Dove.

THe third Assertion is somewhat like the second, That a Dove or Pigeon hath no gall, which is affirmed from very great Antiquity; for as Pierius observeth, from this consideration the Ægyptians did make it the Hieroglyphick of meekenesse; it hath beene averred by many holy Writers, commonly delivered by Postillers and Commentators, who from the frequent mention of the Dove in the Canticles, the precept of our Saviour to bee wise as Serpents, and innocent as Doves, and especially the appearance of the holy Ghost in the similitude of this animall, have taken occasion to set downe many affections of the Dove, and what doth most commend it, is that it hath no Gall; and hereof have made use not onely inferiour and minor Divines, but Cyprian, Austin, Isidore, Beda, Rupertus, Jansenius, and many more.

Whereto notwithstanding we know not how to assent, it being repugnant unto the Authority and positive determination of ancient Philosophy; the affirmative of Aristotle in his history of Animals is very plaine, *Fel aliis ventri, aliis intestino jungitur*; Some have the Gall adjoyned to the guts, as the Crow, the Swallow, Sparrow, and the Dove, the same is also attested by Pliny, and not without some passion by Galen, who in his booke *de Atra bile*, accounts him ridiculous that denyes it.

It is not agreeable to the constitution of this Animall, nor can we so reasonably conceive there wants a gall; that is, the hot and fiery humour in a body so hot of temper, which phlegme or melancholy could not effect: Now of what complexion it is, Julius Alexandrinus declareth, when he affirmeth, that some upon the use thereof, have fallen into Feavers and Quinsies; the temper also of their dung and intestinall excretions do also confirme the same, which Topically applyed become a Phænigmus or Rubifying medicine, and are of such fiery parts, that as we reade in Galen, they have of themselves conceived fire, and burnt a house about them, and therefore when in the famine of Samaria, (wherein the fourth part of a cab of Pigeons dung was sold for five

pieces

pieces of silver) it is delivered by Josephus, that men made use hereof instead of common salt, although the exposition seeme strange, it is more probable then many other, for that it containeth very much salt; beside the effects before expressed, it is discernable by taste, and the earth of Columbaries or Dovehouses, so much desired in the artifice of Salt-peter; and to speake generally, the excrements of birds which want both bladder and kidneys, hath more of salt and acrimony, then that of other animals, who beside the guts have also those conveyances; for whereas in these, the salt and lixiviated serosity with some portion of choler, is divided betweene the guts and bladder, it remaines undevided in birds, and hath but a single descent, by the guts, with the exclusions of the belly. Now if becauſe the Dove is of a milde and gentle nature, wee cannot conceive it should be of an hot temper, our apprehensions are not distinct in the measure of constitutions, and the several parts which evidence such conditions: for the Irascible passions doe follow the temper of the heart, but the concupiscible distractions the crasis of the liver; now many have hot livers, which have but coole and temperate hearts, and this was probably the temper of Paris, a contrary constitution to that of Aiax, and in both but short of Medea, who seemed to exceed in either.

Lastly, it is repugnant to experience, for Anatomicall enquirie discovereth in them a gall, and that according to the determination of Aristotle, not annexed unto the Liver, but adhering unto the guts; nor is the humour contained in smaller veines, or obscure capillations, but in a vesicle or little bladder, though some affirme it hath no cystis or bag at all, and therefore the Hieroglyphick of the Ægyptians, though allowable in the sence, is weake in the foundation, who expressing meeknesse and lenity by the portract of a Dove with the taile erected, affirmed it had no gall in the inward parts, but onely in the rumpe, and as it were out of the body, and therefore if they conceived their gods were pleased with the sacrifice of this Animall, as being without gall, the ancient Heathen were surely mistaken in the reason, and in the very oblation, whereas in the holocaust or burnt offerings of Moses the gall was cast away; for as Ben Maimon instructeth, the inwards whereto the gall adhereth were taken out with the crop, according unto the Law, Levit. 1. which the Priest did not burne, but cast unto the East; that is, behinde his back, and readiest place to be carried out of the Sanctuary. And if they also conceived that for this reason, they were the birds of Venus, and wanting the furious and discording part, were more acceptable unto the Deity of Love; they surely added unto the conceit, which was at first venereall, and in this animall may be sufficiently made out from that conception.

The ground of this conceit is partly like the former, that is, the obscure situation of the gall, and out of the Liver, wherein it is commonly

ly enquired, but this is a very injuſt illation, not well conſidering with what variety this part is ſeated in birds; in ſome both at the ſtomack and the liver, as in the Capriceps, in ſome at the liver only, as in Cocks, Turkeys, and Phaſiants, in others at the guts and Liver, as in Hawkes and Kites; in ſome at the guts alone, as Crowes, Doves, and many more, and theſe perhaps may take up all the wayes of ſituation, not onely in birds, but alſo other animals, for what is ſaid of the Anchony or ἀνεχόγαστρος, that anſwerable unto its name, it carrieth the gall in the head, is further to be enquired; and though the diſcoloured particles in the skin of an Heron, be commonly termed Galls, yet is not this animall deficient in that part; and thus when it is conceived that the eyes of Tobias were cured by the gall of the fiſh Callyonimus or *Scorpius marinus*, commended to that effect by Dioſcorides, although that part were not in the liver, were there reaſon to doubt that probability, and whatſoever animall it was, it may be received without exception when tis delivered, the married couple as a teſtimony of future concord, did caſt the gall of the ſacrifice behinde the Altar.

A ſtrict and literall acception of a looſe and tropicall expreſſion was a ſecond ground hereof; for while ſome affirmed it had no gall, intending onely thereby no evidence of anger or fury, others have conſtrued it anatomically, and denied that part at all; by which illation we may inferre, and that from ſacred Text, a Pigeon hath no heart, according to that expreſſion, Hoſea 7. *Factus eſt Ephraim ſicut Columba ſeducta non habens cor*; and ſo from the letter of Scripture wee may conclude it is no milde, but a fiery and furious animall, according to that of Jeremy, chap. 25. *Facta eſt terra in deſolationem à facie iræ Columbæ:* and againe, chap. 46. *Revertamur ad terram nativitatis noſtræ à facie gladii columbæ*, where notwithſtanding the Dove is not literally intended, but thereby are implyed the Babylonians whoſe Queene Semiramis was called by that name, and whoſe ſucceſſors did beare the Dove in their ſtandard: ſo is it proverbially ſaid, *Formicæ ſua bilis ineſt, habet & muſca ſplenem*, whereas wee all know Philoſophy denyeth theſe parts, nor hath Anatomy diſcovered them in inſects.

If therefore any ſhall affirme a Pigeon hath no gall, implying no more thereby then the lenity of this animall, wee ſhall not controvert his affirmation; and thus may wee make out the aſſertions of ancient Writers, and ſafely receive the expreſſions of thoſe great Divines and worthy Fathers; but if by a tranſition from Rhetorick to Logick, hee ſhall contend, it hath no ſuch part, or humour, he committeth an open fallacy, and ſuch as was probably firſt committed concerning Spaniſh Mares, whoſe ſwiftneſſe tropically expreſſed from their generation by the wind, might after be groſly taken, and a reall truth conceived in that conception.

CHAP.

Chap. IV.

Of the Bever.

THat a Bever to escape the Hunter, bites off his testicles or stones, is a tenent very ancient, and hath had thereby advantage of propagation; for the same we finde in the Hieroglyphicks of the Ægyptians, in the Apologue of Æsope, an Author of great antiquity, who lived in the beginning of the Persian Monarchy, and in the time of Cyrus, the same is touched by Aristotle in his Ethicks, but seriously delivered by Ælian, Plinie and Solinus, with the same we meet with in Juvenal, who by an handsome and metricall expression more welcomely engrafts it in our junior memories——*imitatus Castora, qui se*

Eunuchum ipse facit cupiens evadere damno
Testiculorum, adeo medicatum intelligit inguen, it hath been propagated by Emblems, and some have been so bad Gramarians, as to be deceived by the name, deriving *Castor à castrando*; whereas, the proper Latine word is *Fibor*, and *Castor*, but borrowed from the Greeke so called *quasi* γάστωρ, that is, *Animal ventricosum*, from his swaggy and prominent belly.

Herein therefore to speake compendiously, wee first presume to affirme, that from a strict enquiry, we cannot maintaine the evulsion or biting of any parts, and this is declareable from the best and most professed Writers, for though some have made use hereof in a Morall or Tropicall way, yet have the professed discoursers by silence deserted, or by experience rejected this assertion. Thus was it in ancient times discovered, and experimentally refuted by one Sestius a Physitian, as it stands related by Plinie; by Dioscorides, who plainely affirmes that this tradition is false, by the discoveries of moderne Authors, who have expresly discoursed hereon, as Aldrovandus, Mathiolus, Gesnerus, Bellonius; by Olaus *Magnus*, Peter Martyr and divers others, who have described the manner of their venations in America, they generally omitting this way of their escape, and have delivered severall other, by which they are daily taken.

The originall of the conceit was probably Hieroglyphicall, which after became Mythologicall unto the Greeks, & so set down by Æsop, and by processe of tradition, stole into a totall verity, which was but partially true, that is in it's covert sense and morallity. Now why they placed this invenion upon the Bever, (beside the Medicall and Merchantable commodity of *castoreum* or parts conceived to be bitten away) might be the sagacitie and wisedome of that animall, which indeed from the workes it performes, and especially it's artifice in building is very strange, and surely not to be matched by any other, omit-

ted

ted by Plutarch *de ſolertia animalium*, but might have much advantaged the drift of that diſcourſe.

If therefore any affirme a wiſe man ſhould demeane himſelfe like the Bever, who to eſcape with his life, contemneth the loſſe of his genitalls; that is, in caſe of extremity, not ſtrictly to endeavour the preſervation of all, but to ſit downe in the enjoyment of the greater good, though with the detriment and hazzard of the leſſer; wee may hereby apprehend a reall and uſefull truth; and in this latitude of beliefe, wee are content to receive the fable of Hippomanes who redeemed his life, with the loſſe of a golden ball; and whether true or falſe, we reject not the tragedy of Abſyrtus, and the diſperſion of his members by Medea to perplex the purſuit of her father; but if he ſhall poſitively affirme this act, and cannot beleeve the morall; unleſſe hee alſo credit the fable, hee is ſurely greedy of deluſion, and will hardly avoide deception in theories of this nature. The error therefore and Alogie in this opinion, is worſe then in the laſt, that is not to receive figures for realities, but expect a verity in Apologues, and beleeve, as ſerious affirmations, confeſſed and ſtudied fables.

Againe, if this were true, and that the Bever in chaſe make ſome divulſion of parts, as that which we call *Caſtoreum*; yet are not theſe parts avelled to be termed Teſticles or ſtones, for theſe cods or follicles are found in both ſexes, though ſomewhat more protuberant in the male; there is hereto no derivation of the ſeminall parts, nor any paſſage from hence, unto the veſſels of ejaculations; ſome perforations onely in the part it ſelfe, through which the humor included doth exudate; as may be obſerved in ſuch as are freſh, and not much dryed with age; and laſtly, the Teſticles properly ſo called, are of a leſſer magnitude and ſeated inwardly upon the loynes; and therefore it were not only a fruitleſſe attempt, but impoſſible act, to eunuchate or caſtrate themſelves, and might bee an hazardous practiſe of Arte, if at all attempted by others.

Now all this is confirmed from the experimentall teſtimony of five very memorable Authors: Bellonius, Geſnerus, Amatus, Rondeletius, and Mathiolus, who receivng the hint hereof from Rondeletius in the Anatomie of two Bevers, did finde all true that had been delivered by him, whoſe words are theſe in his learned book *de Piſcibus*: *Fibri in inguinibus geminos tumores habent utrinque unicum, ovi Anſerini magnitudine, inter hos eſt mentula in maribus, in fœminis pudendum hi tumores teſtes non ſunt, ſed folliculi membranâ contecti, in quorũ medio ſinguli ſunt meatus è quibus exudat liquor pinguis & ceroſus, quem ipſe Caſtor ſæpe admoto ore lambit & exugit, poſtea veluti oleo, corporis partes oblinit; Hos tumores teſtes non eſſe hinc maxime colligitur, quod ab illis nulla eſt ad mentulam via neque ductus quo humor in mentulæ meatum derivetur & foras emittatur; præterea quod teſtes intus reperiuntur, eoſdem tumores Moſcho*

animali in esse puto, è quibus odoratum illud pus emanat; then which words there can be none plainer, nor more evidently discover the improprietie of this appellation: that which is included in the cod or visible bagge about the groine, being not the Testicle, or any spermaticall part, but rather a collection of some superfluous matter deflowing from the body, especially the parts of nutrition as unto their proper emunctories, and as it doth in Musck and Civet cats, though in a different and offensive odour, proceeding partly from i'ts food, that being especially fish, whereof this humor may be a garous excretion, or a raucide and olidous separation.

Most therefore of the Modernes before Rondeletius, and all the Antients excepting Sestius, have misunderstood this part, as conceiving *Castoreum* for the Testicles of the Bever, as Dioscorides, Galen, Ægineta, Ætius, and others have pleased to name it. The Egyptians also failed in the ground of their Hieroglyphick, when they expressed the punishment of adultery by the Bever depriving himself of his testicles, which was amongst them the penalty of such incontinencie. Nor is Ætius perhaps, too strictly to be observed, when he prescribeth the stones of the Otter, or River-dog, as succedaneous unto *Castoreum:* but most inexcusable of all is Plinie, who having before him in one place the experiment of Sestius against it, sets downe in another, that the Bevers of Pontus bite off their testicles, and in the same place affirmeth the like of the Hyena.

Now the ground of this mistake might be the resemblance and situation of these tumors about those parts, wherein we observe the testicles in other animalls; which notwithstanding is no well founded illation; for the testicles are defined by their office, and not determined by place or situation; they having one office in all, but different seats in many; for beside that no serpent or fishes oviparous, have any stones at all; that neither biped nor quadruped oviparous have any exteriorly, or prominent in the groyne, some also that are viviparous contain these parts within, as beside this animall the Elephant, and the Hedge-hog.

If any therefore shall terme these, testicles, intending metaphorically, and in no strict acception, his language is tolerable and offends our ears no more then the Tropicall names of plants, when we read in Herballs in the severall kindes of Orchis of Dogs, Fox, and Goat-stones; but if he insist thereon, and maintaine a propriety in this language, our discourse hath overthrowne his assertion, nor will Logicke permit his illation; That is, from things alike, to conclude a thing the same, and from an accidentall convenience that is a similitude in place or figure, to infer a specificall congruity or substantiall concurrence in nature.

CHAP.

Chap. V.

Of the Badger.

THat a Brock or Badger hath his legs of one ſide ſhorter then of the other, though an opinion perhaps not very ancient, is yet very generall, received not only by theoriſts and unexperienced beleevers, but aſſented unto by moſt who have the opportunity to behold and hunt them dayly; which notwithſtanding upon enquiry I finde repugnant unto the three determinators of truth, Authority, Senſe and Reaſon: For firſt, Albertus *magnus* ſpeaks dubiouſly, confeſſing he could not confirme the verity hereof, but Aldrovand affirmeth plainly, there can be no ſuch inequality obſerved; and for my own part, upon indifferent enquiry, I cannot diſcover this difference, although the regardible ſide be defined, and the brevity by moſt imputed unto the left.

Againe, it ſeems no eaſie affront unto reaſon, and generally repugnant unto the courſe of nature; for if we ſurvey the totall ſet of animals, we may in their legs, or organs of progreſſion, obſerve an equality of length, and parity of numeration; that is, not any to have an odde leg, or the ſupporters and movers of one ſide not exactly anſwered by the other; although the hinder may be unequall unto the fore and middle legs, as in Frogs, Locuſts and Graſhoppers, or both unto the middle, as in ſome beetles, and ſpiders, as is determined by Ariſtotle *de inceſſu animalium*; perfect and viviparous quadrupeds, ſo ſtanding in their poſition of proneneſſe, that the oppoſite joynts of neighbour legs conſiſt in the ſame plaine, and a line deſcending from their navell interſects at right angles the axis of the earth: It happeneth often I confeſſe that a Lobſter hath the chely or great claw of one ſide longer then the other, but this is not properly their leg, but a part of apprehenſion, and whereby they hold or ſeize upon their prey; for in them the legs and proper parts of progreſſion are inverted backward, and ſtand in a poſition oppoſite unto theſe.

Laſtly, the monſtroſity is ill contrived, and with ſome diſadvantage, the ſhortneſſe being affixed unto the legs of one ſide, which might have been more tolerably placed upon the thwart or Diagoniall movers; for the progreſſion of quadrupeds being performed *per Diametrum*, that is the croſſe legs moving or reſting together, ſo that two are alwayes in motion, and two in ſtation at the ſame time, the brevity had been more tolerable in the croſſe legs; for then the motion and ſtation had beene performed by equall legs, whereas herein they are both performed by unequall organs, and the imperfection becomes diſcoverable at every hand.

Chap. VI.
Of the Beare.

THat a Bear brings forth her young informous and unshapen, which she fashioneth after by licking them over, is an opinion not only vulgar, and common with us at present, but hath been of old delivered by ancient Writers upon this foundation, it was a Hieroglyphicke amon the Ægyptians; Aristotle seems to countenance it, Solinus, Plinie and Ælian directly affirme it, and Ovid smoothly delivereth it——

——————*Nec catulus partu quem reddidit ursa recenti*
Sed male viva caro est, lambendo mater in artus
Ducit & in formam qualem cupit ipsa reducit.

Which opinion notwithstanding is not only repugnant unto the sense of every one that shall with diligence enquire into it, but the exact and deliberate experiment of three authenticke Philosophers; the first of Mathiolus in his Comment on Dioscorides, whose words are to this effect. In the valley of Anania about Trent, in a Beare which the Hunters eventerated, I beheld the young ones with all their parts distinct, and not without shape, as many conceive, giving more credit unto Aristotle and Plinie, then experience and their proper senses. Of the same assurance was Julius Scaliger in his Exercitations, *Vrsam fœtus informes potius ejicere, quam parere, si vera dicunt, quos postea linctu effingat; Quid hujusce fabulæ authoribus fidei habendum ex hac historia cognosces, In nostris Alpibus venatores fœtam ursam cepere, dissecta ea fœtus plane formatus intus inventus est:* and lastly, Aldrovandus who from the testimony of his owne eyes affirmeth, that in the cabinet of the Senate of Bononia, there was preserved in a glasse a Cub dissected out of a Beare perfectly formed, and compleat in every part.

It is moreover injurious unto reason, and much impugneth the course and providence of nature, to conceive a birth should be ordained before there is a formation; for the conformation of parts is necessarily required not only unto the prerequisites and previous conditions of birth, as motion and animation, but also unto the parturition or very birth it selfe; wherein not only the Dam, but the younglings play their parts, and the cause and act of exclusion proceedeth from them both: for the exclusion of animals is not meerly passive like that of egges, nor the totall action of delivery to be imputed unto the mother; but the first attempt beginneth from the Infant, which at the accomplished period attempteth to change his mansion, and strugling to come forth, dilacerates and breaks those parts which restrained him before.

Beside (what few take notice of) men hereby doe in a high measure vilifie the workes of God, imputing that unto the tongue of a beast, which is the strangest artifice in all the acts of nature, that is the formation

mation of the Infant in the womb, not only in mankind, but all viviparous animals whatsoever, wherin the plastick or formative faculty, from matter appearing homogeneous, and of a similary substance erecteth bones, membranes, veynes and arteries, and out of these contriveth every part in number, place and figure, according to the law of its species, which is so far from being fashioned by any outward agent, that once omitted or perverted by a slip of the inward Phidias, it is not reducible by any other whatsoever; and therefore, *mirè me plasmaverunt manus tuæ*, though it originally respected the generation of man, yet is it applyable unto that of other animalls, who entring the wombe in indistinct and simple materialls, returne with distinction of parts, and the perfect breath of life; he that shall consider these alterations without, must needs conceive there have been strange operations within, which to behold it were a spectacle almost worth ones being, a sight beyond all, except that man had been created first, and might have seen the shew of five dayes after.

Now as the opinion is repugnant both unto sense and reason, so hath it probably been occasioned from some slight ground in either; thus in regard the cub comes forth involved in the Chorion, a thick and tough membrane obscuring the formation, and which the Dam doth after bite, and teare asunder, the beholder at first sight conceives it a rude and informous lumpe of flesh, and imputes the ensuing shape unto the mouthing of the Dam; which addeth nothing thereunto, but onely drawes the curtaine, and takes away that vaile which conceded the piece before; and thus have some endeavoured to enforce the same from reason; that is, the small and slender time of the Beares gestation, or going with her young, which lasting but few dayes (a month some say) the exclusion becomes precipitous, and the young ones consequently informous; according to that of Solinus, *Trigesimus dies uterum liberat ursæ, unde evenit ut præcipitata fœcunditas informes creet partus*; but this will overthrow the generall method of nature, in the works of generation; for therein the conformation is not only antecedent, but proportionall unto the exclusion, and if the period of the birth be short, the terme of conformation will be as sudden also, there may I confesse from this narrow time of gestation ensue a minority or smalnesse in the exclusion, but this however inferreth no informity, and it still receiveth the name of a naturall and legitimate birth; whereas if we affirme a totall informity, it cannot admit so forward a terme as an Abortment; for that supposeth conformation, and so wee must call this constant and intended act of nature, a slip, an *ἔκρυσις* or effluxion, that is an exclusion before conformation, before the birth can beare the name of the parent, or be so much as properly called an Embryon.

CHAP.

Chap. VII.

Of the Basilisk.

MAny opinions are passant concerning the Basiliske or little king of Serpents, commonly called the Cockatrice, some affirming, others denying, most doubting the relations made hereof; what therefore in these incertainties we may more surely determine, that such an animall there is, if we evade not the testimony of Scripture, and humane Writers, we cannot safely deny: So is it said Psal. 91. *Super aspidem & Basiliscum ambulabis*, wherein the vulgar Translation retaineth the word of the Septuagint, using in other places the Latine expression *Regulus*, as Proverb. 23. *Mordebit ut coluber, & sicut Regulus venena diffundet*, and Jeremy 8. *Ecce ego mittam vobis serpentes Regulos, &c.* That is, as ours translate it, Behold I will send Serpents, Cockatrices among you which will not be charmed, and they shall bite you; and as for humane Authors, or such as have discoursed of animals, or poysons, it is to be found almost in all, as Dioscorides, Galen, Pliny, Solinus, Ælian, Ætius, Avicen, Ardoynus, Crevinus, and many more; In Aristotle I confesse we finde no mention, but Scaliger in his Comment and enumeration of Serpents, hath made supply, and in his Exercitations delivereth that a Basilisk was found in Rome, in the dayes of Leo the fourth, and the like is reported by Sigonius, and some are so farre from denying one, that they have made severall kinds thereof, for such is the Catoblepas of Pliny, conceived by some, and the Dryinus of Ætius by others.

But although we deny not the existence of the Basilisk, yet whether we do not commonly mistake in the conception hereof, and call that a Basilisk which is none at all, is surely to be questioned; for certainely that which from the conceit of its generation we vulgarly call a Cockatrice, and wherein (but under a different name) we intend a formall Identity and adequate conception with the Basilisk, is not the Basilisk of the Ancients, whereof such wonders are delivered. For this of ours is generally described with legs, wings, a serpentine and winding taile, and a crist or combe somewhat like a Cock; but the Basilisk of elder times was a proper kinde of Serpent, not above three palmes long, as some account, and differenced from other Serpents by advancing his head, and some white markes or coronary spots upon the crowne, as all authentick Writers have delivered.

Nor is this Cockatrice onely unlike the Basiliske, but of no reall shape in nature, and rather an Hieroglyphicall fancy, to expresse their different intentions, set forth in different fashions; sometimes with the head of a man, sometimes with the head of an Hawke, as Pierius hath delivered, and as with addition of legs the Heralds and Painters

still

ſtill deſcribe it; nor was it onely of old a ſymbolicall and allowable invention, but is now become a manuall contrivance of Art, and artificiall impoſture, whereof beſides others, Scaliger hath taken notice: *Baſiliſci formam mentiti ſunt vulgo Gallinaceo ſimilem, & pedibus binis, neque enim abſimiles ſunt cæteris ſerpentibus, niſi maculâ quaſi in vertice candidâ, unde illi nomen Regium*, that is, men commonly counterfeit the forme of a Baſilisk, with another like a Cock, and with two feet, whereas they differ not from other Serpents, but in a white ſpeck upon their crowne; now although in ſome manner it might be counterfeited in Indian Cocks, and flying Serpents, yet is it commonly contrived out of the skins of Thornebacks, Scaites or Maids, as Aldrovand hath obſerved, and alſo graphically deſcribed in his excellent booke of Fiſhes.

Nor is onely the exiſtency of this animall conſiderable, but many things delivered thereof, particularly its poyſon, and its generation. Concerning the firſt, according to the doctrine of the Ancients, men ſtill affirme, that it killeth at a diſtance, that it poyſoneth by the eye, and that by priority of viſion; now that deleterious it may bee at ſome diſtance and deſtructive without a corporall contaction, what uncertainty ſoever there be in the effect, there is no high improbability in the relation; for if plagues or peſtilentiall Atomes have beene conveyed in the ayre from different Regions, if men at a diſtance have infected each other; if the ſhaddowes of ſome trees be noxious, if Torpedoes deliver their opium at a diſtance, and ſtupifie beyond themſelves; we cannot reaſonably deny, that, beſide our groſſe and reſtrained poyſons requiring contiguity unto their actions, there may proceed from ſubtiler ſeeds, more agile emanations, which will contemne thoſe Laws, and invade at diſtance unexpected.

That this venenation ſhooteth from the eye, and that this way a Baſilisk may empoyſon, although thus much be not agreed upon by Authors, ſome imputing it unto the breath, others unto the bite, it is not a thing impoſſible; for eyes receive offenſive impreſſions, from their objects, and may have influences deſtructive to each other; for the viſible ſpecies of things ſtrike not our ſenſes immaterally, but ſtreaming in corporall rayes, do carry with them the qualities of the object from whence they flow, and the medium through which they paſſe: Thus through a greene or red glaſſe all things wee behold appeare of the ſame colours; thus ſore eyes affect thoſe which are ſound, and themſelves alſo by reflection, as will happen to an inflamed eye that beholds it ſelfe long in a glaſſe; thus is faſcination made out, and thus alſo it is not impoſſible, what is affirmed of this animall, the viſible rayes of their eyes carrying forth the ſubtileſt portion of their poyſon, which received by the eye of man, or beaſt, infecteth firſt the braine, and is from thence communicated unto the heart.

But

But lastly, that this destruction should be the effect of the first beholder, or depend upon priority of aspection, is a point not easily to be granted, and very hardly to be made out upon the principles of Aristotle, Alhazen, Vitello, and others; who hold that sight is made by Reception, and not by Extramission, by receiving the rayes of the object into the eye, and not by sending any out; for hereby although he behold a man first, the Basilisk should rather be destroyed, in regard he first receiveth the rayes of his Antipathy and venemous emissions which objectively move his sense; but how powerfull soever his owne poyson be, it invadeth not the sence of man, in regard he beholdeth him not; and therefore this conceit was probably first begot by such as held the contrary opinion of sight by extramission, as did Pythagoras, Plato, Empedocles, Hipparchus, Galen, Macrobius, Proclus, Simplicius, with most of the Ancients, and is the postulate of Euclide in his Opticks: and of this opinion might they be, who from this Antipathy of the Basilisk and man, expressed first the enmity of Christ and Sathan, and their mutuall destruction thereby; when Satan being elder then his humanity, beheld Christ first in the flesh, and so he was destroyed by the Serpent, but Elder then Sathan in his Divinity, and so beholding him first he destroyed the old Basilisk, and overcame the effects of his poyson, sin, death, and hell.

As for the generation of the Basilisk, that it proceedeth from a Cocks egge hatched under a Toad or Serpent, it is a conceit as monstrous as the brood it selfe: for if wee should grant that Cocks growing old, and unable for emission, amasse within themselves some seminall matter, which may after conglobate into the forme of an egge, yet will this substance be unfruitfull, as wanting one principle of generation, and a commixture of the seed of both sexes, which is required unto production, as may be observed in the egges of hens not trodden, and as we have made triall in some which are termed Cocks egges; It is not indeed impossible that from the sperme of a Cock, Hen, or other animall being once in putrescence, either from incubation, or otherwise, some generation may ensue, not univocall and of the same species, but some imperfect or monstrous production; even as in the body of man from putred humours, and peculiar wayes of corruption, there have succeeded strange and unseconded shapes of wormes, whereof we have beheld some our selves, and reade of others in medicall observations: and so may strange and venemous Serpents be severall wayes engendered; but that this generation should be regular, and alway produce a Basilisk, is beyond our affirmation, and we have good reason to doubt.

Againe, it is unreasonable to ascribe the equivocacy of this forme unto the hatching of a Toade, or imagine that diversifies the production; for Incubation alters not the species, nor if wee observe it so much

much as concurres either to the ſex or colour, as evidently appeares in the eggs of Ducks or Partridges hatched under a Hen, there being required unto their excluſion, onely a gentle and continued heate, and that not particular or confined unto the ſpecies or parent; ſo have I knowne the ſeed of ſilke-wormes hatched on the bodies of women, and ſo Pliny reports that Livia the wife of Auguſtus hatched an egge in her boſome; nor is onely an animall heate required hereto, but an elementall and artificiall warmth will ſuffice; for as Diodorus delivereth, the Ægyptians were wont to hatch their eggs in ovens, and many eye witneſſes confirme that practiſe unto this day: and therefore this generation of the Baſilisk, ſeemes like that of Caſtor and Helena, he that can credit the one, may eaſily beleeve the other; that is, that theſe two were hatched out of the egge, which Jupiter in the forme of a Swan, begat on his Miſtris Leda.

The occaſion of this conceit might be an Ægyptian tradition concerning the bird Ibis, which after became transferred unto Cocks; for an old opinion it was of that Nation, that the Ibis feeding upon Serpents, that venemous food ſo inquinated their ovall conceptions, or egges within their bodies, that they ſometimes came forth in Serpentine ſhapes, and therefore they alwayes brake their egges, nor would they endure the bird to ſit upon them; but how cauſeleſſe their feare was herein, the daily Incubation of Ducks, Peahens, and many other teſtifie, and the Stork might have informed them, which bird they honoured and cheriſhed, to deſtroy their Serpents.

That which much promoted it, was a miſapprehenſion in holy Scripture upon the Latine Tranſlation in Eſay 51. *Ova aſpidum ruperunt, & telas Aranearum texuerunt, qui comedent de ovis eorum morietur, & quod confotum eſt, erumpet in Regulum*, from whence notwithſtanding, beſide the generation of Serpents from egges there can be nothing concluded; but what kind of ſerpents are meant not eaſie to be determined, for tranſlatiõs are very different: Tremellius rendring the Aſp Hæmorrhous, & the Regulus or Baſilisk a Viper, & our tranſlation for the Aſpe, ſets down a Cockatrice in the text, and an Adder in the margine.

Another place of Eſay doth alſo ſeeme to countenance it, chap. 14. *Ne Lætèris Philiſtæa quoniam diminuta eſt virga percuſſoris tui, de radice enim colubri egredietur Regulus, & ſemen ejus abſorbens volucrem*, which ours ſomewhat favourably rendreth, out of the Serpents Root ſhall come forth a Cockatrice, and his fruit ſhall be a fierie flying Serpent: But Tremellius, *è radice Serpentis prodit Hæmorrhous, & fructus illius Prætervolans*, wherein the words are different, but the ſenſe is ſtill the ſame; for therein are figuratively intended Vzziah and Ezechias, for though the Philiſtines had eſcaped the Minor Serpent Vzziah, yet from his ſtock, a fiercer Snake ſhould ariſe, that would more terribly ſting them, and that was Ezechias.

Chap. VIII.

Of the Wolfe.

SUch a Story as the Basilisk is that of the Wolfe concerning priority of vision, that a man becomes hoarse or dumb, if a Wolfe have the advantage first to eye him, and this is in plaine language affirmed by Plinie: *In Italia ut creditur, Luporum visus est noxius, vocemque homini, quem prius contemplatur adimere*; so is it made out what is delivered by Theocritus, and after him by Virgil——*Vox quoq; Mœrim*
Iam fugit ipsa, Lupi Mœrim videre priores.
And thus is the proverbe to be understood, when during the discourse the partie or subject interveneth, and there ensueth a sudden silence, it is usually said, *Lupus est in fabulâ*: which conceit being already convicted, not only by Scaliger, Riolanus and others, but daily confutable almost every where out of England, we shall not further refute.

The ground or occasional original hereof was probably the amazement and sudden silence, the unexpected appearance of wolves do often put upon travellers; not by a supposed vapour, or venemous emanation, but a vehement fear which naturally produceth obmutescence, and sometimes irrecoverable silence: thus birds are silent in presence of an hawk, and Plinie saith that dogs are mute in the shadow of an Hyæna; but thus could not the spirits of worthy Martyrs be silenced, who being exposed not onely unto the eyes, but the mercilesse teeth of Wolves, gave lowd expressions of their faith, and their holy clamours were heard as high as heaven.

That which much promoted it beside the common proverb, was an expression in Theocritus, a very ancient Poet ὁ φθίσῃ λύκον εἶδες, *Edere non poteris vocem, Lycus est tibi visus*; which Lycus was Rivall unto another, and suddenly appearing stopped the mouth of his Corrivall: now Lycus signifying also a Wolf, occasioned this apprehension; men taking that appellatively, which was to be understood properly, and translating the genuine acception; which is a fallacy of Æquivocation, and in some opinions begat the like conceit concerning Romulus and Remus, that they were fostered by a Wolfe, the name of the nurse being *Lupa*; and founded the fable of Europa, and her carryage over Sea by a Bull, because the Ship or Pilots name was Taurus; and thus have some been startled at the proverb *Bos in linguâ*, confusedly apprehending how a man should be said to have an Oxe in his tongue, that would not speake his minde; which was no more then that a piece of money had silenced him: for by the Oxe was onely implyed a piece of coine stamped with that figure, first currant with the Athenians, and after among the Romanes.

Chap.

Chap. IX.

Of Deere.

THe common opinion concerning the long life of Animals, is very ancient, especially of Crowes, Chaughes and Deere; in moderate accounts exceeding the age of man, in some the dayes of Nestor, and in others surmounting the yeares of Artephius, or Methuselah; from whence Antiquity hath raised proverbiall expressions, and the reall conception of their duration, hath been the hyperbolicall expression of others. From all the rest we shall single out the Deere, upon concession a long lived Animal, and in longævity by many conceived to attaine unto hundreds; wherein permitting every man his owne beliefe, we shall our selves crave libertie to doubt, and our reasons are these ensuing.

The first is that of Aristole, drawne from the increment and gestation of this animal, that is, it's sudden arrivance unto growth and maturitie, and the small time of it's remainder in the wombe; his words in the translation of Scaliger, are these; *De ejus vitæ longitudine fabulantur, neque enim aut gestatio aut incrementum hinnulorum ejusmodi sunt, ut præstent argumentum longævi animalis*, that is, fables are railed concerning the vivassity of Deere; for neither are their gestation or increment, such as may afford an argument of long life; and these saith Scaliger, are good mediums conjunctively taken, that is, not one without the other; For of animalls viviparous such as live long, goe long with young, and attaine but slowly to their maturitie and stature; so the Horse that liveth about thirty, arriveth unto his stature about six years, and remaineth above nine moneths in the wombe; so the Camell that liveth unto fifty, goeth with young no lesse then ten moneths, and ceaseth not to grow before seaven; and so the Elephant that liveth an hundred, beareth it's young above a yeare, and arriveth unto perfection at twenty; on the contrary, the Sheep and Goat, which live but eight or ten yeares, goe but five moneths, and attaine to their perfection at two yeares; and the like is observable in Cats, Hares, and Conies; and so the Deere that endureth the wombe but eight moneths, and is compleat at six yeares, from the course of nature, wee cannot expect to live an hundred, nor in any proportionall allowance much more then thirty, as having already passed two generall motions observable in all animations, that is, it's beginning and encrease, and having but two more to runne thorow, that is, it's state and declination, which are proportionally set out by nature in every kinde, and naturally proceeding admit of inference from each other.

The other ground that brings it's long life into suspition, is the immoderate salacity, and almost unparalleld excesse of venerie, which

every September may be obſerved in this Animall, and is ſuppoſed to ſhorten the lives of Cockes, Partridges, and Sparrowes; certainely a confeſſed and undeniable enemie unto longæuitie, and that not onely as a ſigne in the complexionall deſire, and impetuoſitie, but alſo as a cauſe in the frequent act, or iterated performance thereof; For though we conſent not with that Philoſopher, who thinks a ſpermaticall emiſſion unto the waight of one dragme, is æquivalent unto the effuſion of ſixtie ounces of blood, yet conſidering the reſolution and languor enſuing that act in ſome, the extenuation and marcour in others, and the viſible acceleration it maketh of age in moſt, wee cannot but thinke it much abridgeth our dayes: although we alſo concede that this excluſion is naturall, that nature it ſelfe will finde a way hereto without either act or object; And although it be placed among the ſixe non naturals, that is, ſuch as neither naturally conſtitutive, nor meerly deſtructive, doe preſerve or deſtroy according unto circumſtance; yet do we ſenſibly obſerve an impotencie or totall privation thereof, prolongeth life, and they live longeſt in every kinde that exerciſe it not at all, and this is true not onely in Eunuches by nature, but ſpadoes by Art; For caſtrated animals in every ſpecies are longer lived then they which retaine their virilities: For the generation of bodies is not effected as ſome conceive, of ſoules, that is, by Irradiation, or anſwerably unto the propagation of light, without its proper diminution; but therein a tranſmiſſion is made materially from ſome parts, and Ideally from every one, and the propagation of one, is in a ſtrict acception, ſome minoration of another; and therefore alſo that axiome in Philoſophy, that the generation of one thing, is the corruption of another, although it be ſubſtantially true concerning the forme and matter, is alſo diſpoſitively verified in the efficient or producer.

As for more ſenſible arguments, and ſuch as relate unto experiment, from theſe we have alſo reaſon to doubt its age, and preſumed vivacity; for where long life is naturall, the markes of age are late, and when they appear, the journey unto death cannot be long. Now the age of a Deere (as Ariſtotle long agoe obſerved) is beſt conjectured, by the view or the hornes and teeth; from the hornes there is a particular and annuall account unto ſix yeares, they ariſing firſt plaine, and ſo ſucceſſively branching, after which the judgement of their yeares by particular markes becomes uncertaine; but when they grow old, they grow leſſe branched, and firſt doe loſe their ἀμυντῆρες, or *propugnacula*; that is, their brow Antlers, or loweſt furcations next the head, which Ariſtotle ſaith the young ones uſe in fight, and the old as needles have them not at all. The ſame may be alſo collected from the loſſe of their Teeth, whereof in old age they have few or none before in either jaw. Now theſe are infallible markes of age; and when they appeare, wee muſt confeſſe a declination, which notwithſtanding (as men informe us in

England) where obſervations may well be made, will happen between twenty and thirty: As for the bone or rather induration of the roots of the arterial veyn, and great artery, which is thought to be found only in the heart of an old Deere, and therefore becomes more precious in its rarity, it is often found in Deere, much under thirty, and wee have knowne ſome affirme they have found it in one of halfe that age; and therefore in that account of Plinie of a Deere with a collar about his necke, put on by Alexander the Great, and taken alive a hundred years after, with other relations of this nature we much ſuſpect impoſture or miſtake; and if we grant their verity, they are but ſingle relations, and very rare contingencies in individualls, not affording a regular diduction upon the ſpecies: For though Ulyſſes his Dog lived unto twenty two, and the Athenian Mule unto fourſcore, we doe not meaſure their dayes by thoſe yeares, or uſually ſay, they live thus long, nor can the three hundred years of John of times, or Neſtor, overthrow the aſſertion of Moſes, or afford a reaſonable encouragement beyond his ſeptuagenary determination.

The ground and authority of this conceit was firſt Hieroglyphicall, the Egyptians expreſſing longævitie by this animall, but upon what uncertainties, and alſo convincible falſities they often erected ſuch emblems we have elſewhere delivered; and if that were true which Ariſtotle delivers of his time, and Plinie was not afraid to take up long after, the Ægyptians could make but weake obſervations herein; for though it be ſaid that Æneas feaſted his followers with Veniſon, yet Ariſtotle affirms that neither Deer nor Boar were to be found in Africa; and how far they miſcounted the lives and duration of Animals, is evident from their conceit of the Crow, which they preſume to live five hundred yeares, and from the lives of Hawkes which (as Ælian delivereth) the Ægyptians doe reckon no leſſe then at ſeven hundred.

The ſecond which led the conceit unto the Grecians, and probably deſcended from the Ægyptians, was Poeticall, and that was a paſſage of Heſiod, thus rendred by Auſonius,

Ter binos deciesq́; novem ſuper exit in annos
Iuſta ſenes centum quos implet vita virorum
Hos novies ſuperat vivendo garrula cornix
Et quater egreditur cornicis ſæcula cervus
Alipedem cervum ter vincit corvus.——

To ninty ſix the life of man aſcendeth,
Nine times as long that of the Chough extendeth,
Foure times beyond, the life of Deere doth goe,
And thrice is that ſurpaſſed by the Crow. So that according to this acconnt, allowing ninety ſix for the age of man, the life of a Deere amounts unto three thouſand, foure hundred, fifty ſix; A conceit

ceit ſo hard to be made out, that many have deſerted the common and literall conſtruction. So Theon in Aratus would have the number of nine not taken ſtrictly, but for many yeares: In other opinions the compute ſo farre exceeded truth, that they have thought it more probable to take the word Genea, that is a generation conſiſting of many yeares, but for one yeare, or a ſingle revolution of the Sunne, which is the remarkable meaſure of time, and within the compaſſe whereof we receive our perfection in the wombe. So that by this conſtruction, the yeares of a Deere ſhould be but thirty ſix, as is diſcourſed at large in that Tract of Plutarch, concerning the ceſſation of Oracles, and whereto in his Diſcourſe of the Crow, Aldrovandus alſo inclineth: others not able to make it out, have rejected the whole account, as may bee obſerved from the words of Plinie, *Heſiodus qui primus aliquid de longævitate vitæ prodidit, fabuloſe (reor) multa de hominum ævo referrence cornici novem noſtras attribuit ætates quadruplum ejus cervis, id triplicatum corvis, & reliqua fabuloſius de Phœnice & nymphis*; and this how ſlender ſoever, was probably the ſtrongeſt ground Antiquity had for this longævity of Animalls, that made Theophraſtus expoſtulate with Nature concerning the long life of Crows, that begat that Epithite of Deer πυκνόκρωνος, in Oppianus, and that expreſſion of Juvenal *—Longa & cervina ſenectus.*

The third ground was Philoſophicall and founded upon a probable reaſon in nature, and that is the defect of a Gall, which part (in the opinion of Ariſtotle and Plinie) this animall wanted, and was conceived a cauſe and reaſon of their long life, according (ſay they) as it happeneth unto ſome few men, who have not this part at all; but this aſſertion is firſt defective in the verity concerning the animall alleadged: for though it be true, a Deere hath no gall in the liver like many other animalls, yet hath it that part in the guts as is diſcoverable by taſte and colour: and therefore Plinie doth well correct himſelfe, when having affirmed before, it had no gall, he afterward ſaith, ſome hold it to bee in the guts, and that for their bitterneſſe, dogs will refuſe to eat them. It is alſo deficient in the verity of the Induction or connumeration of other annimalls conjoyned herewith, as having alſo no gall; that is, as Plinie accounteth, *Equi, Muli, &c.* Horſes, Mules, Aſſes, Deer, Goats, Boars, Camells, Dolphins, have no gall; concerning Horſes, what truth there is herein we have declared before; as for Goats wee finde not them without it, what gall the Camell hath, Ariſtotle declareth, that Hogs alſo have it, we can affirm, and that not in any obſcure place, but in the liver, even as it is ſeated in man.

That therefore the Deere is no ſhort lived animall, we will acknowledge, that comparatively, and in ſome ſenſe long lived wee will concede; and thus much we ſhall grant if we commonly account its dayes by thirty ſix or forty; for thereby it will exceed all other cornigerous animalls,

animalls, but that it attaineth unto hundreds, or the years delivered by Authors, since we have no authentick experience for it, since wee have reason and common experience against it, since the grounds are false and fabulous which doe establish it, wee know no ground to assent.

Concerning the Deere there also passeth another opinion, that the males thereof doe yearly lose their pizzell; for men observing the decidence of their hornes, doe fall upon the like conceit of this part that it annually rotteth away, and successively reneweth againe. Now the ground hereof, was surely the observation of this part in Deere after immoderate venery, and about the end of their Rutt, which sometimes becomes so relaxed and pendulous, it cannot be quite retracted; and being often beset with flyes, it is conceived to rot, and at last to fall from the body; but herein experience will contradict us: for those Deere which either dye or are killed at that time, or any other, are alwayes found to have that part entire; and reason also will correct us, for spermaticall parts, or such as are framed from the seminall principles of parents, although homogeneous or similary, will not admit a Regeneration, much lesse will they receive an integrall restauration, which being organicall and instrumentall members, consist of many of those. Now this part, or animall of Plato, containeth not only sanguineous and reparable particles, but is made up of veynes, nerves, arteries, and in some animalls of bones, whose reparation is beyond its owne fertility, and a fruit not to be expected from the fructifying part it selfe, which faculty were it communicated unto animalls, whose originalls are double, as well as unto plants, whose seed is within themselves, we might abate the Art of Taliacotius, and the new inarching of noses; and therefore the phansies of Poets have been so modest, as not to set downe such renovations, even from the powers of their dictyes; for the mutilated shoulder of Pelops was pieced out with Ivory, and that the limbs of Hyppolitus were set together, not regenerated by Æsculapius, is the utmost assertion of Poetry.

Chap. X.

Of the Kingfisher.

That a Kingfisher hanged by the bill, sheweth in what quarter the wind is, by an occult and secret propriety, converting the breast to that point of the Horizon from whence the wind doth blow, is a received opinion, and very strange; introducing naturall Weathercocks, and extending magneticall conditions as far as animall natures: A conceit supported chiefly by present practice, yet not made out by reason or experience.

For

For unto reaſon it ſeemeth very repugnant, that a carcaſſe or body diſanimated, ſhould be ſo affected with every wind, as to carry a conformable reſpect and conſtant habitude thereto: For although in ſundry animalls, we deny not a kinde of naturall Aſtrologie, or innate preſention both of wind and weather; yet that proceeding from ſenſe receiving impreſſions from the firſt mutation of the ayre, they cannot in reaſon retaine that apprehenſion after death, as being affections which depend on life, and depart upon diſanimation, and therefore with more favourable reaſon may we draw the ſame effect, or ſympathie upon the Hedgehog, whoſe preſention of winds is ſo exact, that it ſtoppeth the north or ſoutherne hole of its neſt, according to prenotion of theſe winds enſuing, which ſome men unexpectedly obſerving, have beene able to make predictions which way the wind would turne, and have been eſteemed hereby wiſe men in point of weather. Now this proceeding from ſenſe in the creature alive, it were not reaſonable to hang up an Hedgehog dead, and to expect a conformable motion unto its living converſion: and though in ſundry plants their vertues doe live after death, and we know that Scammonie, Rhubarbe, and Senna will purge without any vitall aſſiſtance; yet in animals or ſenſible creatures, many actions are mixt, and depend upon their living forme, as well as that of miſtion, and though they wholly ſeeme to retaine unto the body depart upon diſunion: Thus Glowewormes alive, project a luſtre in the darke, which fulgour notwithſtanding ceaſeth after death; and thus the Torpedo which being alive ſtupifies at a diſtance, applied after death, produceth no ſuch effect, which had they retained, in places where they abound, they might have ſupplyed Opium, and ſerved as frontalls in Phrenſies.

As for experiment we cannot make it out by any we have attempted, for if a ſingle Kingfiſher be hanged up with untwiſted ſilke in an open roome, and where the ayre is free, it obſerves not a conſtant reſpect unto the mouth of the wind, but variouſly converting doth ſeldome breaſt it right; if two be ſuſpended in the ſame roome, they will not regularly conforme their breaſts, but oft-times reſpect the oppoſite points of heaven; and if we conceive that for the exact exploration they ſhould be ſuſpended where the ayre is quiet and unmoved, that clear of impediments, they may more freely convert upon their naturall verticity, we have alſo made this way of inquiſition in ſuſpending them in large and capacious glaſſes cloſely ſtopped; wherein nevertheleſſe we obſerved a caſual ſtation, and that they reſted irregularly upon converſion, whereſoever they reſted remaining inconverted, and poſſeſſing one point of the Compaſſe, whilſt the wind perhaps hath paſſed the two and thirty.

Commonly miſtaken for the true Halcion.

The ground of this popular practice might be the common opinion concerning the vertue prognoſticke of theſe birds, the naturall regard they

they have unto the winds, and they unto them againe, more especially remarkable in the time of their nidulation, and bringing forth their young; for at that time which happeneth about the brumall Solstice, it hath beene observed even unto a proverbe, that the Sea is calme, and the winds do cease, till the young ones are excluded, and forsake their nest, which floateth upon the Sea, and by the roughnesse of winds might otherwise be overwhelmed; but how farre hereby to magnifie their prediction we have no certaine rule, for whether out of any particular prenotion they chuse to sit at this time, or whether it be thus contrived by concurrence of causes, and the providence of Nature, securing every species in their production, is not yet determined. Surely many things fall out by the Designe of the generall motor and undreamt of contrivance of Nature, which are not imputable unto the intention or knowledge of the particular Actor. So though the seminallity of Ivy be almost in every earth, yet that it ariseth and groweth not, but where it may be supported, we cannot ascribe unto the distinction of the seed, or conceive any science therein which suspends and conditionates its eruption. So if, as Pliny and Plutarch report, the Crocodils of Ægypt, so aptly lay their eggs, that the natives thereby are able to know how high the floud will attaine; yet is it hard to make out, how they should divine the extent of the inundation, depending on causes so many miles remote, that is, the measure of showers in Æthiopia; and whereof, as Athanasius in the life of Authony delivers, the Devill himselfe upon demand could make no cleere prediction; and so are there likewise many things in Nature, which are the forerunners or signes of future effects, whereto they neither concurre in causality or prenotion, but are secretly ordered by the providence of causes, and concurrence of actions collaterall to their signations.

Chap. XI.

Of Griffons.

That there are Griffons in Nature, that is a mixt and dubious animall, in the fore-part resembling an Eagle, and behinde the shape of a Lion, with erected eares, foure feet, and a long taile, many affirme, and most I perceive deny not; the same is averred by Ælian, Solinus, Mela, and Herodotus, countenanced by the name sometimes found in Scripture, and was an Hieroglyphick of the Egyptians.

Notwithstanding wee finde most diligent enquirers to be of a contrary assertion; for beside that Albertus and Pliny have disallowed it, the learned Aldrovand hath in a large discourse rejected it; Mathias Michovius who writ of those Northerne parts wherein men place these Griffins, hath positively concluded against it, and if examined by

the doctrine of animals, the invention is monstrous, nor much inferiour unto the figment of Sphynx, Chimæra, and Harpies: for though some species there be of a middle and participating natures, that is, of bird and beast, as we finde the Bat to be, yet are their parts so conformed and set together that we cannot define the beginning or end of either, there being a commixtion of both in the whole, rather then an adaptation, or cement of the one unto the other.

Now for the word γρὺψ, or Gryps, sometimes mentioned in Scripture, and frequently in humane Authors, properly understood, it signifies some kinde of Eagle or Vulture, from whence the Epithite Grypus for an hooked or Aquiline nose. Thus when the Septuagint makes use of this word in the eleventh of Leviticus, Tremellius and our Translation hath rendred it the Ossifrage, which is one kinde of Eagle, although the Vulgar translation, and that annexed unto the Septuagint retaine the word *Grips*, which in ordinary and schoole construction is commonly rendred a Griffin; yet cannot the Latin assume any other sence then the Greek, from whence it is borrowed; and though the Latine *Gryphes* be altered somewhat by the addition of an h, or aspiration of the letter π, yet is not this unusuall; so what the Greeks call τρόπαιον, the Latins will call *Trophæum*, and that person which in the Gospel is named Κλεοπας, the Latins will render *Cleophas*, and therefore the quarrell of Origen was injust and his conception erroneous, when he conceived the food of Griffins forbidden by the Law of Moses, that is, poeticall animals, and things of no existence: and therefore when in the Hecatombs and mighty oblations of the Gentiles, it is delivered they sacrificed Gryphes or Griffins, hereby we may understand some stronger sort of Eagles; and therefore also when it said in Virgil of an improper match, or Mopsus marrying Nysa, *Iungentur jam gryphes equis*, we need not hunt after other sense, then that strange unions shall be made, and differing natures be conjoyned together.

As for the testimonies of ancient Writers, they are but derivative, and terminate all in one Aristeus a Poet of Proconesus; who affirmed that neere the Arimaspi, or one eyed Nation, Griffins defended the mines of gold: but this as Herodotus delivereth, he wrote by heresay; and Michovius who hath expresly written of those parts plainly affirmeth, there is neither gold nor Griffins in that countrey, nor any such animall extant, for so doth he conclude, *Ego vero contra veteres authores, Gryphes nec in illa septentrionis, nec in aliis orbis partibus inveniri affirmarim.*

Lastly, concerning the Hieroglyphicall authority, although it neereſt approacheth the truth, it doth not inferre its existency; the conceit of the Griffin properly taken being but a symbolicall phancy, in so intolerable a shape including allowable morality. So doth it well

make

make out the properties of a Guardian, or any perſon entruſted; the eares implying attention, the wings celerity of execution, the Lion-like ſhape, courage and audacity, the hooked bill, reſervance and tenacity. It is alſo an Embleme of valour and magnanimity, as being compounded of the Eagle and Lion, the nobleſt animals in their kinds; and ſo is it applyable unto Princes, Preſidents, Generals, and all heroick Commanders, and ſo is it alſo borne in the Coat-armes of many noble Families of Europe.

Chap. XII.

Of the Phœnix.

THat there is but one Phœnix in the world, which after many hundred yeares burneth it ſelfe, and from the aſhes thereof ariſeth up another, is a conceit not new or altogether popular, but of great Antiquity; not onely delivered by humane Authors, but frequently expreſſed by holy Writers, by Cyrill, Epiphanius, and others, by Ambroſe in his Hexameron, and Tertul. in his Poem *de Iudicio Domini*, but more agreeably unto the preſent ſence in his excellent Tract, *de Reſur. carnis*, *Illum dico alitem orientis peculiarem, de ſingularitate famoſum, de poſteritate monſtruoſum, qui ſemetipſum libenter funerans renovat, natali fine decedens, atque ſuccedens iterum Phœnix, ubi jam nemo, iterum ipſe, quia non jam alius idem.* The Scripture alſo ſeemes to favour it, particularly that of Job 21. in the Interpretation of Beda, *Dicebam in nidulo meo moriar & ſicut Phœnix multiplicabo dies*, and Pſalme 91. Δίκαιος ὡσπερ φοῖνιξ ἀνθήσει, *vir juſtus ut Phœnix florebit*, as Tertullian renders it, and ſo alſo expounds it in his booke before alledged.

All which notwithſtanding we cannot preſume the exiſtence of this animall, nor dare we affirme there is any Phœnix in Nature. For, firſt there wants herein the definitive confirmator and teſt of things uncertaine, that is, the ſenſe of man: for though many Writers have much enlarged hereon, there is not any ocular deſcriber, or ſuch as preſumeth to confirme it upon aſpection; and therefore Herodotus that led the ſtory unto the Greeks, plainly ſaith, he never attained the ſight of any, but onely in the picture.

Againe, primitive Authors, and from whom the ſtreame of relations is derivative, deliver themſelves very dubiouſly, and either by a doubtfull parentheſis, or a timorous concluſion overthrow the whole relation: Thus Herodotus in his Euterpe, deliveting the ſtory hereof, preſently interpoſeth, ἐμοὶ μὲν οὐ πίσα λέγοντες; that is, which account ſeemes to me improbable; Tacitus in his Annals affordeth a larger ſtory, how the Phœnix was firſt ſeene at Heliopolis in the reigne of Seſoſtris, then in the reigne of Amaſis, after in the dayes of Ptolomy, the third of the Macedonian rare; but at laſt thus determineth, *Sed An-*

tiquitas obſcura; & nonnulli falſum eſſe hunc Phœnicẽ, neque Arabũ è terris credidere. Pliny makes yet a fairer ſtory, that the Phœnix flew into Ægypt in the Conſulſhip of Quintus Plancius, that it was brought to Rome in the Cenſorſhip of Claudius, in the 800. yeare of the City, and teſtified alſo in their records; but after all concludeth, *Sed quæ falſa eſſe nemo dubitabit*, but that this is falſe no man will make doubt.

Moreover, ſuch as have naturally diſcourſed hereon, have ſo diverſly, contrarily, or contradictorily delivered themſelves, that no affirmative from thence can reaſonably be deduced; for moſt have poſitively denyed it, and they which affirme and beleeve it, aſſigne this name unto many, and miſtake two or three in one. So hath that bird beene taken for the Phœnix which liveth in Arabia, and buildeth its neſt with Cinnamon, by Herodotus called *Cinnamulgus*, and by Ariſtotle *Cinnamomus*, and as a fabulous conceit is cenſured by Scaliger; ſome have conceived that bird to be the Phœnix, which by a Perſian name with the Greeks is called Rhyntace; but how they made this good we finde occaſion of doubt, whilſt we reade in the life of Artaxerxes, that this is a little bird brought often to their tables, and wherewith Paryſatis cunningly poyſoned the Queene. The Manucodiata or bird of Paradiſe, hath had the honour of this name, and their feathers brought from the Molucca's, doe paſſe for thoſe of the Phœnix; which though promoted by rariety with us, the Eaſterne travellers will hardly admit, who know they are common in thoſe parts, and the ordinary plume of Janizaries among the Turks. And laſtly, the bird Semenda hath found the ſame appellation, for ſo hath Scaliger obſerved and refuted; nor will the ſolitude of the Phœnix allow this denomination, for many there are of that ſpecies, & whoſe trifiſtulary bill and crany we have beheld our ſelves; nor are men onely at variance in regard of the Phœnix it ſelfe, but very diſagreeing in the accidents aſcribed thereto: for ſome affirme it liveth three hundred, ſome five, others ſix, ſome a thouſand, others no leſſe then fifteene hundred yeares; ſome ſay it liveth in Æthiopia, others in Arabia, ſome in Ægypt, others in India, and ſome I thinke in Utopia, for ſuch muſt that be which is deſcribed by Lactantius, that is, which neither was ſinged in the combuſtion of Phaeton, or overwhelmed by the inundation of Deucaleon.

Laſtly, many Authors who have made mention hereof, have ſo delivered themſelves, and with ſuch intentions we cannot from thence deduce a confirmation: For ſome have written Poetically as Ovid, Mantuan, Lactantius, Claudian, and others: Some have written myſtically, as Paracelſus in his booke *de Azoth*, or *de ligno & linea vitæ*; and as ſeverall Hermeticall Philoſophers, involving therein the ſecret of their Elixir, and enigmatically expreſſing the nature of their great worke: Some have written Rhetorically, and conceſſively not controverting

verting but assuming the question, which taken as granted advantaged the illation : So have holy men made use hereof as farre as thereby to confirme the Resurrection; for discoursing with heathens who granted the story of the Phœnix, they induced the Resurrection from principles of their owne, and positions received among themselves. Others have spoken Emblematically and Hieroglyphically, and so did the Ægyptians, unto whom the Phœnix was the Hieroglyphick of the Sunne; and this was probably the ground of the whole relation, succeeding ages adding fabulous accounts, which laid together built up this singularity, which every pen proclaimeth.

As for the Texts of Scripture, which seem to confirme the conceit duly perpended, they adde not thereunto; For whereas in that of Job, according to the Septuagint or Greeke Translation we finde the word Phœnix, yet can it have no animall signification; for therein it is not expressed φοῖνιξ but στέλεχος φοίνικος, the truncke of the Palme tree, which is also called Phœnix, and therefore the construction will be very hard, if not applyed unto some vegetable nature; nor can we safely insist upon the Greek expression at all: for though the Vulgar translates it *Palma*, & som retain the Phœnix, others do render it by a word of a different sense; for so hath Tremellius delivered it: *Dicebam quod apud nidum meum expirabo, & sicut arena multiplicabo dies*; so hath the Geneva and ours translated it, I said I shall dye in my nest, and shall multiply my dayes, as the sand : as for that in the booke of Psalmes, *Virjustus ut Phœnix florebit*, as Epiphanius and Tertullian render it, it was only a mistake upon the homonymy of the Greeke word Phœnix, which signifies also a Palme tree; which is a fallacy of equivocation, from a community in name, inferring a common nature, and whereby we may as firmly conclude, that Diaphœnicon a purging electuary hath some part of the Phœnix for its ingredient, which receiveth that name from Dates, or the fruit of the Palme tree, from whence as Plinie delivers, the Phenix had its name.

Nor doe we only arraigne the existence of this animall, but many things are questionable which are ascribed thereto, especially its unity, long life, and generation : As for its unity or conceit there should bee but one in nature, it seemeth not onely repugnant unto Philosophy, but also the holy Scripture, which plainly affirmes, there went of every sort two at least into the Arke of Noah, according to the text, Gen. 7. Every fowle after his kinde, every bird of every sort, they went into the Arke, two and two of all flesh, wherein there is the breath of life, and they that went in, went in both male and female of all flesh; it infringeth the Benediction of God concerning multiplication, Gen. 1. God blessed them saying, Be fruitfull and multiply, and fill the waters in the seas, and let fowl multiply in the earth; and again, Chap. 8. Bring forth with thee, every living thing that they may breed abundantly in the

the earth, and be fruitfull, and multiply upon the earth, which termes are not applyable unto the Phœnix, whereof there is but one in the world, and no more now living then at the first benediction, for the production of one, being the destruction of another, although they produce and generate, they encrease not, and must not be said to multiply, who doe not transcend an unity.

As for longævity, as that it liveth a thousand yeares, or more, beside that from imperfect observations and rarity of appearance, no confirmation can be made, there may be probably a mistake in the compute; for the tradition being very ancient and probably Ægyptian, the Greeks who dispersed the fable, might summe up the account by their owne numeration of yeares, whereas the conceit might have its originall in times of shorter compute; for if we suppose our present calculation, the Phœnix now in nature will be the sixt from the Creation, but in the middle of its years, and if the Rabbines propheſie succeed shall conclude its dayes, not in its owne, but the last and generall flames, without all hope of Revivication.

That the world should last but six thousand years.

Concerning its generation, that without all conjunction, it begets and reseminates it selfe, hereby we introduce a vegetable production in animalls, and unto sensible natures, transferre the propriety of plants, that is to multiply among themselves, according to the law of the Creation, Gen. 1. Let the earth bring forth grasse, the herbe yeelding seed, and the tree yeelding fruit, whose seed is in it selfe; which way is indeed the naturall way of plants, who having no distinction of sex, and the power of the species contained in every *individuum*, beget and propagate themselves without commixtion, and therefore their fruits proceeding from simpler roots, are not so unlike, or distinguishable from each other, as are the off-springs of sensible creatures and prolifications descending from double originalls; but animall generation is accomplished by more, and the concurrence of two sexes is required to the constitution of one; and therefore such as have no distinction of sex, engender not at all, as Aristotle conceives of Eeles, and testaceous animalls; and though plant animalls doe multiply, they doe it not by copulation, but in a way analogous unto plants; so Hermophrodites although they include the parts of both sexes, and may be sufficiently potent in either, yet unto a conception require a seperated sex, and cannot impregnate themselves; and so also though Adam included all humane nature, or was (as some opinion) an Hermaphrodite, yet had hee no power to propagate himselfe; and therefore God said, It is not good that man should be alone, let us make him an help meet for him, that is, an help unto generation; for as for any other help, it had been fitter to have made another man.

Now whereas some affirme that from one Phœnix there doth not immediatly proceed another, but the first corrupteth into a worme, which

which after becommeth a Phœnix, it will not make probable this production; For hereby they confound the generation of perfect animalls with imperfect, ſanguineous, with exanguious, vermiparous, with oviparous, and erect Anomalies, diſturbing the lawes of Nature; Nor will this corruptive production be eaſily made out, in moſt imperfect generations; for although we deny not that many animals are vermiparous, begetting themſelves at a diſtance, & as it were at the ſecond hand, as generally inſects, and more remarkably Butterflies and Silkwormes; yet proceeds not this generation from a corruption of themſelves, but rather a ſpecificall, and ſeminall diffuſion, retaining ſtill the Idea of themſelves, though it act that part a while in other ſhapes: and this will alſo hold in generations equivocall, and ſuch are not begotten from Parents like themſelves; ſo from Frogs corrupting, proceed not Frogs againe; ſo if there be anatiferous trees, whoſe corruption breaks forth into Bernacles, yet if they corrupt, they degenerate into Maggots, which produce not themſelves againe; for this were a confuſion of corruptive and ſeminall production, and a fruſtration of that ſeminall power committed to animalls at the creation. The probleme might have beene ſpared, Why wee love not our Lice as well as our Children, Noahs Arke had beene needleſſe, the graves of animals would be the fruitfulleſt wombs; for death would not deſtroy, but empeople the world againe.

Since therefore we have ſo ſlender grounds to confirm the exiſtence of the Phœnix, ſince there is no ocular witneſſe of it, ſince as we have declared, by Authors from whom the Story is derived, it rather ſtands rejected, ſince they who have ſeriouſly diſcourſed hereof, have delivered themſelves negatively, diverſly or contrarily, ſince many others cannot be drawne into Argument as writing Poetically, Rhetorically, Enigmatically, Hieroglyphically, ſince holy Scripture alleadged for it duely prepended, doth not advantage it, and laſtly ſince ſo ſtrange a generation, vnity and long life hath neither experience nor reaſon to confirme it, how farre to rely on this tradition, wee referre unto conſideration.

But ſurely they were not wel-wiſhers unto εὐπορίαν, or remedies eaſily acquired, who derived medicines from the Phœnix, as ſome have done, and are juſtly condemned by Pliny, *Irridere eſt vitæ, remedia poſt milleſimum annum reditura monſtrare*; It is a folly to finde out remedies that are not recoverable under a thouſand yeares, or propoſe the prolonging of life by that which the twentieth generation may never behold; more veniable is a dependance upon the Philoſophers ſtone, potable gold, or any of thoſe Arcana's, whereby Paracelſus that dyed himſelfe at 47. gloried that he could make other men immortall; which ſecrets, although extreamly difficult, and *tantum non* infeſſible, yet are they not impoſſible, nor do they (rightly underſtood) impoſe

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any violence on Nature, and therefore if ſtrictly taken for the Phœnix very ſtrange is that which is delivered by Plutarch, *De ſanitate tuenda*, That the braine thereof is a pleaſant bit, but that it cauſeth the head-ach; which notwithſtanding the luxurious Emperour could never taſt, though he had at his table many a Phœnicopterus, yet had he not one Phœnix; for though he expected and attempted it, wee reade not in Lampridius that he performed it; and conſidering the unity thereof it was a vaine deſigne, that is, to deſtroy any ſpecies, or mutilate the great accompliſhment of ſix dayes; and although ſome conceive, and it may ſeeme true, that there is in man a naturall poſſibility to deſtroy the world in one generation, that is, by a generall conſpire to know no woman themſelves and diſable all others alſo; yet will this never bee effected, and therefore Cain after he had killed Abel, were there no other woman living, could not have alſo deſtroyed Eve; which although he had a naturall power to effect, yet the execution thereof, the providence of God would have reſiſted, for that would have impoſed another creation upon him, and to have animated a ſecond rib of Adam.

Chap. XIII.

Frogges, Toades, and Toad ſtone.

Concerning the venemous urine of Toads, of the ſtone in a Toads head, and of the generation of Frogges, conceptions are entertained which require conſideration; And firſt, that a Toad piſſeth, and this way diffuſeth its venome, is generally received, not onely with us, but alſo in other parts; for ſo hath Scaliger obſerved in his Comment, *Averſum urinam reddere ob oculos perſecutoris pernicioſam ruricolis perſuaſum eſt*; and Mathiolus hath alſo a paſſage, that a Toad communicates its venom, not onely by vrine, but by the humiditie and ſlaver of its mouth; which notwithſtanding ſtrictly underſtood, will not conſiſt with truth; For to ſpeak properly, a Toad piſſeth not, nor doe they containe thoſe urinary parts which are found in other animals, to avoid that ſerous excretion; as may appeare unto any that exenterats or diſſects them; for therein will be found neither bladder, kidneyes, or ureters, any more then they are in birds, which although theyeat & drink, yet for the moiſt and dry excretion, have but one vent and common place of excluſion; and with the ſame proprietie of language, we may aſcribe that action unto Crowes and Kites: and this is verified not only in Frogs and Toades, but for ought I can diſcover, that may bee true which Ariſtotle affirmeth, that no oviparous animall, that is, which either ſpawne or lay egges doth urine, except the Tortois.

The ground or occaſion of this expreſſion might from hence ariſe, that

that Toades are ſometimes obſerved to exclude or ſpirt out a dark and liquid matter behinde, which indeed we have obſerved to be true, and a venemous condition there may bee perhaps therein, but it cannot bee called their urine; not onely becauſe they want thoſe parts of ſecretion; but becauſe it is emitted averſly or backward, by both ſexes.

As for the ſtone commonly called a Toad-ſtone, which is preſumed to be found in the head of that animall, we firſt conceive it not a thing impoſſible, nor is there any ſubſtantiall reaſon, why in a Toade, there may not be found ſuch hard and lapideous concretions; for the like we daily obſerve in the heads of fiſhes, as Codds, Carpes, and Pearches, the like alſo in Snailes, a ſoft and exoſſeous animall, whereof in the naked and greater ſort, as though ſhe would requite the defect of a ſhell on their back, nature neere the head hath placed a flat white ſtone, or rather teſtaceous concretion, which though Aldrovand affirms, that after diſſection of many, hee found but in ſome few, yet of the great gray Snailes, I have not met with any that wanted it, and the ſame is indeed ſo palpable, that without diſſection it is diſcoverable by the hand.

Againe, though it be not impoſſible, yet is it ſurely very rare, as we are induced to beleeve from ſome enquiry of our owne, from the triall of many who have beene deceived, and the fruſtated ſearch of Porta, who upon the explorement of many, could never finde one; Nor is it onely of rarity, but may be doubted whether it be of exiſtency, or really any ſuch ſtone in the head of a Toad at all: For although lapidaries, and queſtuary enquirers affirme it, yet the Writers of Mineralls and naturall ſpeculators, are of another beliefe conceiving the ſtones which beare this name, to be a Minerall concretion, nor to be found in animalls, but in fields; and therefore *Boetius de Boot* referres it to Aſteria, or ſome kindeof *Lapis ſtellaris*, and plainely concludeth, *Reperiuntur in agris, quos tamen alii in annoſis, ac qui diu in Arundinetis, inter rubos ſeneſque delitnerunt bufonis capitibus generari pertinaciter affirmant.*

Laſtly, if any ſuch thing there be, yet muſt it not for ought I ſee, be taken as we receive it, for a looſe and moveable ſtone, but rather a concretion or induration of the crany it ſelfe; for being of an earthy temper living in the earth, & as ſome ſay feeding thereon, ſuch indurations may ſometimes happen; and thus when Braſſavolus after a long ſearch had diſcovered one, he affirmes it was rather the forehead bone petrified, then a ſtone within the crany; and of this beleefe was Geſner. All which conſidered, wee muſt with circumſpection receive thoſe ſtones, which commonly beare this name, muchleſſe beleeve the traditions, that in envy to mankinde they are caſt out, or ſwallowed down by the Toad, which cannot conſiſt with Anatomy, and with the reſt, enforced this cenſure from Boetius, *Ab eo tempore pro nugis habui quod de Bufonis lapide, ejusq; origine traditur.*

Concerning the generation of Froggs, wee ſhall briefly deliver that account which obſervation hath taught us. By Frogges I underſtand not ſuch as ariſing from putrifaction, are bred without copulation, and becauſe they ſubſiſt not long, are called *Temporariæ*; nor doe I meane hereby the little Frogge of an excellent Parrat-green, that uſually ſits on trees and buſhes, and is therefore called *Ranunculus viridis*, or *Arboreus*; but hereby I underſtand the aquatile or water Frogge whereof in ditches and ſtanding plaſhes, wee may behold many millions every Spring in England; Now theſe doe not as Plinie conceiveth, exclude blacke pieces of fleſh, which after become Frogges, but they let fall their ſpawne in the water, which is of excellent uſe in Phyſicke, and ſcarce unknowne unto any; in this ſpawne of a lentous and tranſparent body, are to be diſcerned many gray ſpecks, or little conglobations, which in a little time become of deepe blacke; a ſubſtance more compacted and terreſtrious then the other, for it riſeth not in diſtillation, and affords a powder, when the white and aqueous part is exhaled. Now of this blacke or duskie ſubſtance is the Frogge at laſt formed, as we have beheld, including the ſpawne with water in a glaſſe, and expoſing it unto the Sunne; for that blacke and round ſubſtance, in a few dayes began to dilate and grow ovall, after a while the head, the eyes, the taile to be diſcerneable, and at laſt to become that which the Ancients called Gyrinus, wee a Porwigle or Tadpole, and this in ſome weekes after, becomes a perfect Frogge, the legs growing out before, and the tayle wearing away, to ſupply the other behinde, as may bee obſerved in ſome, which have newly forſaken the water: for in ſuch, ſome part of the tayle will be ſeen but curtal'd and ſhort, not long and finny as before; a part provided them a while to ſwim and move in the water, that is, untill ſuch time as nature excluded legs, whereby they might be provided not only to ſwim in the water, but move upon the land, according to the amphibious and mixt intention of nature, that is to live in both. And becauſe many affirme, and ſome deliver, that in regard it hath lungs and breatheth a Frogge may bee eaſily drowned, though the reaſon be probable, I finde not the experiment anſwerable; for making triall, and faſtning one about a ſpan under water, it lived almoſt ſix dayes.

Chap. XIV.

Of the Salamander.

THat a Salamander is able to live in flames, to endure and put out fire is an aſſertion, not only of great Antiquitie, but confirmed by frequent, and not contemptible teſtimonie; The Ægyptians have drawne it into their Hieroglyphicks; Ariſtotle ſeemeth to embrace it, more

more plainely Nicander, Serenus, Sammonicus, Ælian, and Plinie, who assignes the cause of this effect. An animall (saith he) so cold that it extinguisheth the fire like Ice; all which notwithstanding, there is on the negative Authoritie and experience; Sextius a Physition, as Plinie delivereth, denied this effect, Dioscorides affirmed it a point of folly to beleeve it, Galen that it endureth the fire a while, but in continuance is consumed therein; For experimentall conviction Mathiolus affirmeth, he saw a Salamander burnt in a very short time; and of the like assertion is Amatus Lusitanus, and most plainly Pierius, whose words in his Hieroglyphicks are these; Whereas it is commonly said, that a Salamander extinguisheth fire, wee have found by experience, that 'tis so farre from quenching hot coales; that it dieth immediatly therein; As for the contrary assertion of Aristotle, it is but by heare say, as common opinion beleeveth, *Hæc enim (ut aiunt) ignem ingrediens eum extinguit*; and therefore there was no absurdity in Galen when as a Septicall medicine he commended the ashes of a Salamander, and Magicians in vaine from the power of this tradition, at the burning of towns or houses expect a relieſe from Salamanders.

The ground of this opinion might be some sensible resistance of fire observed in the Salamander, which being as Galen determineth, cold in the fourth, and moist in the third degree, and having also a nucous humidity above and under the skinne, by vertue thereof may a while endure the flame, which being consumed it can resist no more. Such an humidity there is observed in Newtes, or water-Lizards, especially if their skinnes be prickt or perforated. Thus will Frogges and Snailes endure the flame, thus will whites of egges, vitreous or glassey flegme extinguish a coal, thus are unguents made which protect a while from the fire, and thus beside the Hirpini, there are later stories of men that have pass'd untoucht through fire, and therefore some trueth we allow in the tradition; truth according unto Galen, that it may for a time resist a flame, or as Scaliger avers, extinguish or put out a coale; for thus much will many humide bodies performe, but that it perseveres and lives in that desttuctive element, is a fallacious enlargement; nor doe we reasonably conclude, because for a time it endureth fire, it subdueth and extinguisheth the same, because by a cold and aluminous moisture, it is able a while to resist it, from a peculiarity of nature it subsisteth and liveth in it.

It hath beene much promoted by Stories of incombustible napkins and textures which endure the fire, whose materialls are call'd by the name of Salamanders wooll; which many too literally apprehending, conceive some investing part, or tegument of the Salamander; wherein beside that they mistake the condition of this animal, which is a kinde of Lizard, a quadruped corticated and depilous, that is without wooll, furre, or haire, they observe not the method and generall rule of na-

ture, whereby all Quadrupeds oviparous, as Lizards, Froggs, Tortois, Chameleons, Crocodiles, are without any haire, and have no covering part or hairy inveſtment at all; and if they conceive that from the skin of the Salamander, theſe incremable pieces are compoſed, beſide the experiments made upon the living, that of Braſſavolus will ſtep in, who in the ſearch of this truth, did burne the skin of one dead.

Nor is this Salamanders wooll deſumed from any animal, but a Minerall ſubſtance Metaphorically ſo called from this received opinion; For beſide Germanicus his heart, and Pyrrhus his great Toe, there are in the number of Mineralls, ſome bodies incombuſtible; more remarkably that which the Ancients named Asbeſton, and Pancirollus treats of in the chapter of *Linum vivum:* whereof by Art were weaved napkins, ſhirts, and coats inconſumable by fire, and wherein in ancient times, to preſerve their aſhes pure, and without commixture, they burnt the bodies of Kings; a napkin hereof Plinie reports that Nero had, & the like ſaith Paulus Venetus, the Emperour of Tartarie ſent unto Pope Alexander; and affirms that in ſome parts of Tartarie, there were Mines of Iron whoſe filaments were weaved into incombuſtible cloth, which rare manufacture, although delivered for loſt by Pancirollus, yet Salmuth delivereth in his comment that one Podocaterus a Cyprian, had ſhewed the ſame at Venice, and his materialls were from Cyprus, where indeed Dioſcorides placeth them; the ſame is alſo ocularly confirmed by Vives upon Auſtin and Maiolus in his colloquies; and thus in our daies do men practiſe to make long laſting Snaſts or Elychinons parts for lampes, out of Alumen plumoſum; and by the ſame wee read in Pauſanias, that there alwayes burnt a Lampe before the Image of Minerva.

Chap. XV.

Of the Amphisbæna.

That the Amphisbæna, that is, a ſmaller kinde of Serpent, which moveth forward and backward, hath two heads, or one at either extreame, was affirmed firſt by Nicander, and after by many others, by the Author of the book *de Theriaca ad Piſonem*, aſcribed unto Galen, more plainly Pliny, *Geminum habet caput, tanquam parum eſſet uno ore effundi venenum:* but Ælian moſt confidently, who referring the conceit of Chimera and Hydra unto fables, hath ſet downe this as an undeniable truth.

Whereunto while men aſſent, and can beleeve a bicipitous conformation in any continued ſpecies, they admit a gemination of principall parts, which is not naturally diſcovered in any animall; true it is that other parts in animals are not equall, for ſome make their progreſſion with

with many legs, even to the number of an hundred, as Juli Scolopendræ, or such as are termed centipedes; some flye with two wings, as birds and many insects, some with foure, as all farinaceous or mealy winged animals, as Butter-flies, and Moths, all vaginipennous or sheathwinged insects, as Beetles and Dorrs; some have three Testicles, as Aristotle speakes of the Buzzard, and some have foure stomacks, as horned and ruminating animals; but for the principall parts, the liver, heart, and especially the braine, regularly it is but one in any kinde or species whatsoever.

And were there any such species or naturall kinde of animall, it would be hard to make good those six positions of body, which according to the three dimensions are ascribed unto every animall, that is, *infrà, supra, ante, retro, dextrorsum, sinistrorsum*; for if (as it is determined) that be the anterior and upper part wherein the sences are placed, and that the posterior and lower part which is opposite thereunto, there is no inferiour or former part in this animall, for the senses being placed at both extreames, doe make both ends anteriour, which is impossible, the termes being Relative, which mutually subsist, and are not without each other, and therefore this duplicity was ill contrived to place one head at both extreames, and had beene more tolerable to have setled three or foure at one, and therefore also Poets have been more reasonable then Philosophers, and Geryon or Cerberus, lesse monstrous then Amphisbæna.

Againe, if any such thing there were, it were not to be obtruded by the name of Amphisbæna, or as an animall of one denomination; for properly that animall is not one, but multiplicious or many, which hath a duplicity or gemination of principle parts; and this doth Aristotle define, when he affirmeth a monster is to be esteemed one or many, according to its principle, which he conceived the heart, whence he derived the originall of Nerves, and thereto ascribe many acts which Physitians assigne unto the braine; and therefore if it cannot be called one, which hath a duplicity of hearts in his sence, it cannot receive that appellation with a plurality of heads in ours; And this the practise of Christians hath acknowledged, who have baptized these geminous births, and double connascencies with severall names, as conceiving in them a distinction of soules, upon the devided execution of their functions; that is, while one wept, the other laughing, while one was silent, the other speaking, while one awaked, the other sleeping, as is declared by three remarkable examples in Petrach, Vincentius, and the Scottish history of Buchanan.

It is not denyed there have beene bicipitous Serpents with the head at each extreme, for an example hereof we finde in Aristotle, and in the like forme in Aldrovand wee meet with the Icon of a Lizzard; which double formations do often happen unto multiparous generati-

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ons, more especially that of Serpents, whose conceptions being numerous, and their Eggs in chaines or links together, (which sometime conjoyne and inoculate into each other) they may unite into various shapes, and come out in mixed formations; but these are monstrous productions, and beside the intention of Nature, and the statutes of generation, neither begotten of like parents, nor begetting the like againe, but irregularly produced do stand as Anomalies, and make up the *Quæ genus*, in the generall booke of Nature; which being the shifts and forced pieces, rather then the genuine and proper effects, they afford us no illation, nor is it reasonable to conclude, from a monstrosity unto a species, or from accidentall effects, unto the regular workes of Nature.

Lastly, the ground of the conceit was the figure of this animall, and motion oft times both wayes; for described it is to bee like a worme, and so equally framed at both extremes, that at an ordinary distance it is no easie matter, to determine which is the head; and therefore some observing them to move both wayes, have given the appellation of heads unto both extreames, which is no proper and warrantable denomination, for many animals with one head do ordinarily performe both different and contrary motions; Crabs move sideling, Lobsters will swim swiftly backward, Wormes and Leeches wil move both wayes; and so will most of those animals, whose bodies consist of round and annulary fibers, and move by undulation, that is, like the waves of the Sea, the one protruding the other, by inversion whereof they make a backward motion.

Upon the same ground hath arisen the same mistake concerning the Scolopendra or hundred footed insect, as is delivered by Rhodiginus from the scholiast of Nicander: *Dicitur à Nicandro*, ἀμφικαρὴς, *id est dicepalus aut biceps fictum vero quoniam retrorsum (ut scribit Aristoteles) arrepit*, observed by Aldrovandus, but most plainly by Muffetus, who thus concludeth upon the text of Nicander: *Tamen pace tanti authoris dixerim, unicum illi duntaxat caput licet pari facilitate, prorsum capite, retrorsum ducente cauda, incedat, quod Nicandro altisque imposuisse dubito:* that is, under favour of so great an Author, the Scolopendra hath but one head, although with equall facility it moveth forward and backward, which I suspect deceived Nicander and others.

Chap. XVI.

Of the Viper.

That the young Vipers force their way through the bowels of their Dam, or that the female Viper in the act of generation bites off the head of the male, in revenge whereof the young ones eate through the

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womb and belly of the female is a very ancient tradition; in this ſence entertained in the Hieroglyphicks of the Ægyptians, affirmed by Herodotus, Nicander, Pliny, Plutarch, Ælian, Jerome, Baſil, Iſidore, and ſeems to be countenanced by Ariſtotle, and his ſcholler Theophraſtus; from hence is commonly aſſigned the reaſon why the Romans puniſhed parricides by drowning them in a ſack with a Viper; and ſo perhaps upon the ſame opinion the men of Melita when they ſaw a viper upon the hand of Paul, ſaid preſently without conceit of any other ſin, No doubt this man is a murtherer, whom though he have eſcaped the Sea, yet vengeance ſuffereth him not to live; that is, he is now paid in his own way, the parricidous animall and puniſhment of Murtherers is upon him; and though the Tradition were currant among the Greekes to confirme the ſame the Latine name is introduced, *Vipera quaſi viparĭat*; That paſſage alſo in the Goſpell, O yee generation of Vipers, hath found expoſitions which countenance this conceit; notwithſtanding which authorities, tranſcribed relations and conjectures, upon enquiry we finde the ſame repugnant unto experience and reaſon.

And firſt it ſeemes not only injurious unto the providence of Nature, to ordaine a way of production which ſhould deſtroy the producer, or contrive the continuation of the ſpecies by the deſtruction of the continuator; but it overthrowes and fruſtrates the great Benediction of God, which is expreſſed Gen. 1. God bleſſed them ſaying, Be fruitfull and multiply. Now if it be ſo ordained that ſome muſt regularly periſh by multiplication, and theſe be the fruits of fructifying in the Viper; it cannot be ſaid that God did bleſſe, but curſe this animall; upon thy belly ſhalt thou goe, and duſt ſhalt thou eat all thy life, was not ſo great a puniſhment unto the Serpent after the fall, as encreaſe, be fruitfull and multiply, was before. This were to confound the maledictions of God, and tranſlate the curſe of the Woman upon the Serpent; that is, *in dolore paries*, in ſorrow ſhalt thou bring forth, which being proper unto the women, is verified beſt in the Viper, whoſe delivery is not only accompanied with paine, but alſo with death it ſelf. And laſtly, it overthrows the carefull courſe, and parentall proviſion of nature, whereby the young ones newly excluded are ſuſtained by the Dam, and protected untill they grow up to a ſufficiencie for themſelves; all which is perverted in this eruptive generation, for the Dam being deſtroyed, the younglings are left to their owne protection, which is not conceiveable they can at all performe, and whereof they afford us a remarkable confirmance many dayes after birth; for the young ones ſuppoſed to breake through the belly of the Dam, will upon any fright for protection run into it; for then the old one receives them in at her mouth, which way the fright being paſt they will returne againe; which is a peculiar way of refuge; and though it ſeem ſtrange is avowed by frequent experience, and undeniable teſtimony.

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As for the experiment although we have thrice attempted it, it hath not well ſucceeded; for though wee fed them with milke, branne, cheeſe, &c. the females alwayes dyed before the young ones were mature for this eruption, but reſt ſufficiently confirmed in the experiments of worthy enquirers: Wherein to omit the ancient conviction of Apollonius, we ſhall ſet downe ſome few of moderne Writers: The firſt, of Amatus Luſitanus in his Comment upon Dioſcorides, *Vidimus nos viperas prægnantes incluſas pyxidibus parere, quæ inde ex partu nec mortuæ, nec viſceribus perforatæ manſerunt:* The ſecond is that of Scaliger, *Viperas ab impatientibus moræ fœtibus numeroſiſſimis rumpi atque interire falſum eſſe ſcimus, qui in Vincentii Camerini circulatoris lignea theca vidimus enatas viperellas, parente ſalva:* The laſt and moſt plaine of Franciſcus Buſtamantinus, a Spaniſh Phyſitian of Alcala *de* Henares, whoſe words in his third *de Animantibus Scripturæ*, are theſe: *Cum vero per me & per alios hæc ipſa diſquiſiſſem ſervata Viperina progenie, &c.* that is, when by my ſelfe and others I had enquired the truth hereof, including Vipers in a glaſſe, and feeding them with cheeſe and branne, I undoubtedly found that the Viper was not delivered by the tearing of her bowels, but I beheld them excluded by the paſſage of generation neare the orifice of the ſeidge.

Now althongh the Tradition be untrue, there wanted not many grounds which made it plauſibly received. The firſt was a favourable indulgence and ſpeciall contrivance of nature, which was the conceit of Herodotus who thus delivereth himſelfe: Fearfull animalls, and ſuch as ſerve for food, nature hath made more fruitfull, but upon the offenſive and noxious kinde, ſhe hath not conferred fertility: So the Hare that becommeth a prey unto man, unto beaſts, and fowles of the ayre, is fruitfull even to ſuperfœtation, but the Lyon a fierce and ferocious animall hath young ones but ſeldome, and alſo but one at a time; Vipers indeed, although deſtructive, are fruitfull; but leſt their number ſhould encreaſe, providence hath contrived another way to abate it, for in copulation the female bites off the head of the male, and the young ones deſtroy the mother; but this will not conſiſt with reaſon, as wee have declared before: And if wee more nearly conſider the condition of Vipers and noxious animalls, we ſhall diſcover another proviſion of nature; how although in their paucity ſhee hath not abridged their malignity, yet hath ſhe notoriouſly effected it by their receſſion or latitancie; for not only offenſive inſects as Hornets, waſpes, and the like; but ſanguineous corticated animals, as Serpents, Toads and Lizards, do lye hid and betake themſelves to coverts in the Winter; whereby moſt Countries enjoying the immunity of Ireland and Candie, there ariſeth a temporall ſecurity, from their venome, and an intermiſſion of their miſchiefes, mercifully requiting the time of their activities.

A ſecond ground of this effect, was conceived the juſtice of Nature,

ture, whereby she compensates the death of the father by the matricide or murder of the mother, and this was the expression of Nicander; but the cause hereof is as improbable as the effect, and were indeed an improvident revenge in the young ones, whereby in consequence, and upon defect of provision they must destroy themselves; and whereas he expresseth this decollation of the male by so full a terme as ἀποκόπτειν, that is, to cut or lop off, the act is hardly conceiveable; for the female Viper hath but foure considerable teeth, and those so disposed so slender and needle pointed, that they are apter for puncture then any act of incision; and if any like action there be, it may be onely some fast retention or sudden compression in the Orgasmus or fury of their lust, according as that expression of Horace is construed concerning Lydia and Telephus——— *Sive puer furens,*
Impreßit memorem dente labris notam.

Others ascribe this effect unto the numerous conception of the Viper, and this was the opinion of Theophrastus, who though he denieth the exesion or forcing through the belly, conceiveth nevertheless that upon a full and plentifull impletion there may perhaps succeed a disruption of the matrix, as it happeneth sometimes in the long and slender fish Acus: Now although in hot Countries, and very numerous conceptions in the Viper or other animalls, there may sometimes ensue a dilaceration of the genitall parts, yet is this a rare and contingent effect, and not a naturall and constant way of exclusion; for the wise Creator hath formed the organs of animalls unto their operations, and in whom hee ordaineth a numerous conception, in them he hath prepared convenient receptacles, and a sutable way of exclusion.

Others doe ground this disruption upon their continued or protracted time of delivery, presumed to last twenty dayes, whereat, excluding but one a day, the latter brood impatient, by a forcible proruption anticipate their period of exclusion, and this was the assertion of Plinie, *Cæteri tarditatis impatientes prorumpunt latera, occisâ parente,* which was occasioned upon a mistake of the Greek text in Aristotle, τίκτει δὲ ἐν μία ἡμέρᾳ καθ' ἕν τίκτει δὲ πλείω ἢ εἴκοσιν, which are literally thus translated, *Parit autem una die secundum unum, parit autem plures quam viginti,* and may be thus Englished, She bringeth forth in one day one by one, and sometimes more then twenty; and so hath Scaliger rendred it, *sigillatim parit, absolvit una die interdum plures quam viginti.* But Pliny whom Gaza followeth hath differently translated it, *singulos diebus, singulis parit, numero fere viginti,* whereby he extends the exclusion unto twenty dayes, which in the textuary sense is fully accomplished in one.

But what hath most advanced it, is a mistake in another text of Aristotle, which seemeth directly to determine this disruption, τίκτει μικρὰ, ἐχίδνα ἐν ὑμέσιν, ἃ περιήγγελται τετταροι, ἐνίοτε δὲ ἔξωθεν διαφαγόντα αὐτὰ ἐξέρχεται: which Gaza hath thus translated, *Parit catulos obvolutos membranâ quæ*

tertio die rumpuntur, evenit interdum ut qui in utero adhuc sunt abrosis membranis prorumpant. Now herein very probably Pliny, and many since have been mistaken, for the disruption of the membranes or skins, which include the young ones, conceiving a dilaceration of the matrix and belly of the viper, and concluding from a casuall dilaceration, a regular and constant disruption.

As for the Latin word *Vipera*, which in the Etymologie of Isidore promoteth this conceit, more properly it may imply *vivipera*; for whereas other Serpents lay egges, the Viper excludeth living animalls; and though the Ceraftes be also viviparous, and we have found formed Snakes in the belly of the Cecilia or slow-worme, yet may the Viper emphatically beare that name; for the notation or Etymologie is not of necessity adequate unto the name; and therefore though animall be deduced from *anima*, yet are there many animations beside, and plants will challenge a right therein as well as sensible creatures.

As touching the Text of Scripture, and compellation of the Pharisies, by generation of Vipers, although constructions bee made hereof conformable to this Tradition, and it may be plausibly expounded, that out of a viperous condition, they conspired against their Prophets, and destroyed their spirituall parents; yet (as Jansenius observeth) Gregory and Jerome, doe make another construction, apprehending thereby what is usually implyed by that Proverb, *Mali corvi malum ovum*; that is, of evill parents, an evill generation, a posterity not unlike their majority, of mischievous progenitors, a venemous and destructive progenie.

And lastly, concerning the Hieroglyphicall account, according to the Vulgar conception set downe by Orus Apollo, the authority thereof is only Emblematicall, for were the conception true or false, to their apprehensions, it expressed filiall impiety; which strictly taken, and totally received for truth, might perhaps begin, but surely promote this conception.

Chap. XVII.

Of Hares.

That Hares are both male and female, beside the Vulgar opinion, was the affirmative of Archelaus, of Plutarch, Philostratus, and many more; nor are there hardly any who either treat of mutation or mixtion of sexes, who have not left some mention of this point; some speaking positively, others dubiously, and most resigning it unto the enquiry of the Reader: now hereof to speake distinctly, they must be male and female by mutation and succession of sexes, or else by composition, by mixture or union thereof.

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As for the mutation of ſexes, or tranſition into one another, we cannot deny it in Hares, it being obſervable in man: for hereof beſide Empedocles or Tireſias, there are not a few examples; and though very few, or rather none which have emaſculated or turned women, yet very many who from an eſteem or reallity of being women have infallibly proved men: ſome at the firſt point of their menſtruous eruptions, ſome in the day of their marriage, others many yeares after, which occaſioned diſputes at Law, and conteſtations concerning a reſtore of the dowry; and that not only mankinde, but many other animalls, may ſuffer this tranſexion, we will not deny, or hold it at al impoſſible; although I confeſſe by reaſon of the poſticke and backward poſition of the feminine parts in quadrupeds, they can hardly admit the ſubſtitution of a protruſion effectuall unto maſculine generation, except it be in Retromingents, and ſuch as couple backward.

Nor ſhall we only concede the ſucceſſion of ſexes in ſome, but ſhall not diſpute the tranſition of reputed ſpecies in others; that is, a tranſmutation, or (as Paracelſians terme it) the Tranſplantation of one into another; hereof in perfect animalls of a congenerous ſeed, or neare affinity of natures, examples are not unfrequent, as Horſes, Aſſes, Dogs, Foxes, Phaiſants, Cocks, &c. but in imperfect kindes, and ſuch where the diſcrimination of ſexes is obſcure, theſe transformations are more common: and in ſome within themſelves without commixtion, as particularly in Caterpillers or Silk-wormes, wherein there is viſible and triple transfiguration: but in Plants wherein there is no diſtinction of ſex, theſe transplantations are yet more obvious then any; as that of barley into oates, of wheat into darnell, and thoſe graines which generally ariſe among corne, as cockle, Aracus, Ægilops, and other degenerations which come up in unexpected ſhapes, when they want the ſupport and maintenance of the primary and maſter-formes: And the ſame do ſome affirm concerning other plants in leſſe analogy of figures, as the mutation of Mint into Creſſes, Baſill into Serpoile, and Turneps into Radiſhes; in all which as Severinus conceiveth there may be equivocall ſeeds and Hermaphroditicall principles, which contain the radicality and power of different formes; thus in the ſeed of wheat there lyeth obſcurely the ſeminality of Darnell, although in a ſecondary or inferiour way, and at ſome diſtance of production; which nevertheleſſe if it meet with convenient promotion, or a conflux and conſpiration of cauſes more powerfull then the other, it then beginneth to edifie in chiefe, and contemning the ſuperintendent forme, produceth the ſignatures of its ſelfe.

Now therefore although we deny not theſe ſeverall mutations, and doe allow that Hares may exchange their ſex, yet this we conceive doth come to paſſe but ſometimes, and not in that viciſſitude or annuall alternation as is preſumed; that is, from imperfection to perfection, from

perfection to imperfection, from female unto male, from male to female againe, and so in a circle to both without a permansion in either; for beside the inconceiveable mutation of temper, which should yearly alternate the sex, this is injurious unto the order of nature, whose operations doe rest in the perfection of their intents; which having once attained, they maintaine their accomplished ends, and relapse not againe into their progressionall imperfections: so if in the minority of naturall vigor, the parts of feminality take place, when upon the encrease or growth thereof the masculine appeare, the first designe of nature is atchieved, and those parts are after maintained.

But surely it much impeacheth this iterated transexion of Hares, if that be true which Cardan and other Physitians affirm, that Transmutation of sex is only so in opinion, and that these transseminated persons were really men at first, although succeeding yeares produced the manifesto or evidence of their virilities; which although intended and formed, was not at first excluded, and that the examples hereof have undergone no reall or new transexion, but were Androgynally borne, and under some kind of Hermaphrodites: for though Galen do favour the opinion, that the distinctive parts of sexes are onely different in position, that is inversion or protrusion, yet will this hardly be made out from the Anatomy of those parts, the testicles being so seated in the female that they admit not of protrusion, and the necke of the matrix wanting those parts which are discoverable in the organ of virility.

The second and most received acception, is, that Hares are male and female by conjunction of both sexes, and such are found in mankinde, Poetically called Hermaphrodites, supposed to be formed from the equality, or *non victorie* of either seed, carrying about them the parts of man and woman; although with great variety in perfection, site and ability; not only as Aristotle conceived, with a constant impotencie in one; but as latter Observers affirme, sometimes with ability of either venery: and therefore the providence of some Laws have thought good, that at the yeares of maturity, they should elect one sex, and the errors in the other should suffer a severer punishment; whereby endeavouring to prevent incontinencie, they unawares enjoyned perpetuall chastity; for being executive in both parts, and confined unto one, they restrained a naturall power, and ordained a partiall virginity. Plato and some of the Rabbines proceeded higher, who conceived the first man an Hermaphrodite; and Marcus Leo the learned Jew, in some sense hath allowed it, affirming that Adam in one suppositum without division, contained both male and female; and therefore whereas it is said in the Text, that God created man in his owne Image, in the Image of God created he him, male and female created he them, applying the singular and plurall unto Adam, it might denote that in one substance, and in himselfe he included both sexes which was after divided, and

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the female called Woman. The opinion of Aristotle extendeth farther, from whose assertion all men should be Hermaphrodites; for affirming that women do not spermatize, and conferre a place or receptacle rather then essentiall principles of generation, he deductively includes both sexes in mankinde; for from the father proceed not only males and females, but from him also must Hermaphroditicall and masculo-feminine generations be derived, and a commixtion of both sexes arise from the seed of one: But the Schoolmen have dealt with that sex more hardly then any other, who though they have not much disputed their generation, yet have they controverted their Resurrection, and raysed a query whether any at the last day should arise in the sex of women, as may be observed in the supplement of Aquinas.

Now as we must acknowledge this Androgynall condition in man, so can we not deny the like doth happen in beasts. Thus doe we read in Plinie that Neroes Chariot was drawne by foure Hermaphroditicall Mares, and Cardan affirmes he also beheld one at Antwerpe; and thus may we also concede, that Hares have been of both sexes, and some have ocularly confirmed it; but that the whole species or kinde should be bisexous we cannot affirme, who have found the parts of male and female respectively distinct and single in any wherein we have enquired; and whereas it is conceived, that being an harmlesse animall and delectable food unto man, nature hath made them with double sexes, and that actively and passively performing they might more numerously encrease; we forget an higher providence of nature whereby shee especially promotes the multiplication of Hares, which is by superfetation; that is, a conception upon a conception, or an improvement of a second fruit before the first be excluded, preventing hereby the usuall intermission and vacant time of generation, which is very common and frequently observable in Hares, mentioned long agoe by Aristotle, Herodotus, and Pliny; and we have often observed that after the first cast, there remaine successive conceptions, and other younglings very immature, and far from their terme of exclusion.

Nor need any man to question this in Hares, for the same wee observe doth sometime happen in women; for although it be true that upon conception, the inward orifice of the matrix exactly closeth, so that it commonly admitteth nothing after; yet falleth it out sometime, that in the act of coition, the avidity of that part dilateth it selfe, and receiveth a second burden, which if it happen to be neare in time unto the first, they commonly doe both proceed unto perfection, and have legitimate exclusions, and periodically succeed each other: but if the superfetation be made with considerable intermission, the latter most commonly proves abortive; for the first being confirmed, engrosseth the aliment from the other: However therefore the project of Julia seem very plausible, and that way infallible when she received not her pas-

passengers, before she had taken in her lading, there was a fallibility therein; nor indeed any absolute securitie in the policy of adultery after conception; for the Matrix (which some have called another animall within us, and which is not subjected unto the law of our will) after reception of its proper Tenant, may yet receive a strange and spurious inmate, as is confirmable by many examples in Plinie, by Lariſſæa in Hippocrates, and that merry one in Plautus urged also by Aristotle, that is of Iphicles and Hercules, the one begat by Jupiter, the other by Amphitryon upon Alcmæna; as also in those superconceptions where one childe was like the father, the other like the adulterer, the one favour'd the servant, the other resembled the master.

Now the grounds that begat, or much promoted the opinion of a double sex in hares might bee some little bags or tumors, at first glance representing stones or Testicles, to be found in both sexes about the parts of generation; which men observing in either sex, were induced to beleeve a masculine sex in both; but to speak properly these are no Testicles or parts officiall unto generation, but glandulous substances that seeme to hold the nature of Emunctories; for herein may be perceived slender perforations, at which may be expressed a blacke and fœculent matter; if therefore from these we shall conceive a mixtion of sexes in Hares, with fairer reason we may conclude it in Bevers, whereof both sexes containe a double bagge or tumor in the groine, commonly called the Cod of Castor, as we have delivered before.

Another ground were certaine holes or cavities observeable about the sledge; which being perceived in males, made some conceive there might be also a fæminine nature in them, and upon this very ground, the same opinion hath passed upon the Hyæna, as is declared by Aristotle, and thus translated by Scaliger; *Quod autem aiunt utriusq; sexus habere genitalia falsum est, quod videtur esse fœmineum sub cauda, est simile figuræ fœminino verum pervinum non est*; and thus is it also in Hares, in whom these holes, although they seeme to make a deepe cavity, yet doe they not perforate the skin, nor hold a community with any part of generation, but were (as Plinie delivereth) esteemed the marks of their age, the number of those decyding their number of yeares; what verity there is herein, we shall not contend; for if in other animals there be authentick notations, if the characters of yeares be found in the hornes of Cowes, or in the Antlers of Deere, if we conjecture the age of Horses from joynts in their dockes, and undeniably presume it from their teeth; we cannot affirme, there is in their conceit, any affront unto nature, although, who ever enquireth shall finde no assurance therein.

The last foundation was Retromingency or pissing backward, for men observing both sexes to urine backward, or aversly between their legges, they might conceive there was a fœminine part in both; wherein

wherein they are deceived by the ignorance of the just and proper site of the Pizell or part designed unto the Excretion of urine, which in the Hare holds not the common position, but is aversly seated, and in its distention enclines unto the coccix or scut. Now from the nature of this position, there ensueth a necessitie of Letrocoputation, which also promoteth the conceit; for some observing them to couple without ascension, have not beene able to judge of male or female, or to determine the proper sex in either, and to speake generally this way of copulation, is not appropriate unto Hares, nor is there one, but many wayes of Coition, according to divers shapes and different conformations; for some couple laterally or sidewise as wormes, some circularly or by complication as Serpents, some pronely, that is by contaction of prone parts in both, as Apes, Porcupines, Hedgehogges, and such as are termed Mollia, as the Cuttlefish and the Purple; some mixtly, that is, the male ascending the female, or by application of the prone parts of the one, unto the postick parts of the other, as most Quadrupes; Some aversely, as all Crustaceous animals, Lobsters, Shrimps, and Crevises, and also Retromingents, as Panthers, Tigers, and Hares: This is the constant Law of their Coition, this they observe and transgresse not: onely the vitiositie of man hath acted the varieties hereof; nor content with a digression from sex or species, hath in his own kinde runne thorow the Anomalies of venery, and been so bold, not onely to act, but represent to view, the Irregular wayes of lust.

Chap. XVIII.

Of Molls.

That Molls are blinde and have no eyes, though a common opinion is received with much variety; some affirming onely they have no sight, as Oppianus, the Proverbe Talpa Cæcior, and the word ἀναλαγέα, or Talpitas, which in Hesichius is made the same with Cæcias: some that they have eyes, but no sight, as the text of Aristotle seems to imply, some neither eyes nor sight, as Albertus, Plinie, and the vulgar opinion; some both eyes & sight as Scaliger, Aldrovandus, & some others. Of which opinions the last with some restriction, is most consonant unto truth: for that they have eyes in their head is manifest unto any, that wants them not in his own, and are discoverable, not onely in old ones, but as we have observed in yong and naked conceptions, taken out of the belly of the dam; and he that exactly enquires into the cavitie of their cranies, may discover some propagation of nerves communicated unto these parts; but that the humors together with their coats are also distinct, (though Galen seeme to affirme it) transcendeth our discovery; for separating these little Orbes, and including them in

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magnifying glasses, wee discerned no more then Aristotle mentions, that is, ἡ ὀφθαλμὴ μέλαινα, that is; *humorem nigrum*, nor any more if they bee broken: that therefore they have eyes we must of necessitie affirme, but that they be comparativly incomplete wee need not to denie: So Galen affirmes the parts of generation in women are imperfect, in respect of those of men, as the eyes of Molls in regard of other animals; So Aristotle termes them πηρώσεις, which Gaza translates *oblæsos*, and Scaliger by a word of Imperfection, *inchoatos*.

Now as that they have eyes is manifest unto sense, so that they have sight not incongruous unto reason, if wee call not in question the providence of this provision, that is, to assigne the organs, and yet deny the office, to grant them eyes and withold all manner of vision: for as the inference is faire, affirmatively deduced from the action to the organ, that they have eyes because they see, so is it also from the organ to the action, that they have eyes, therefore some sight designed; if we take the intention of Nature in every species, and except the casuall impediments, or morbosities in individuals; but as their eyes are more imperfect then others, so do we conceive of their sight, or act of vision; for they will runne against things, and hudling forwards fall from high places; so that they are not blinde, nor yet distinctly see, there is in them no cecity, yet more then a cecutiency; they have sight enough to discerne the light, though not perhaps to distinguish of objects or colours; so are they not exactly blinde, for light is one object of vision; and this (as Scaliger observeth) might be as full a sight as Nature first intended; for living in darkenesse under the earth, they had no further need of eyes then to avoid the light, and to be sensible when ever they lost that darkenesse of earth, which was their naturall confinement; and therefore however Translators doe render the word of Aristotle, or Galen, that is, *imperfectos*, *oblæsos*, or *inchoatos*, it is not much considerable; for their eyes are sufficiently begun to finish this action and competently perfect, for this imperfect Vision.

And lastly, although they had neither eyes nor sight, yet could they not be termed blinde; for blindenesse being a privative terme unto sight, this appellation is not admittible in propriety of speech, and will overthrow the doctrine of privations, which presuppose positive formes or habits, and are not indefinite negations, denying in all subjects but such alone wherein the positive habits are in their proper nature, and placed without repugnancy. So do we improperly say a Moll is blinde, if we deny it the organs or a capacity of vision from its created nature; so when the Text of John had said, that man was blinde from his nativity, whose cecity our Saviour cured, it was not warrantable in Nonnus to say he had no eyes at all, as he describeth in his paraphrase, and as some ancient Fathers affirme, that by this miracle they were created in him; and so though the sence may be accepted, that

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proverbe must be candidly interpreted which maketh fishes mute, and call them silent which have no voyce in Nature.

Now this conceit is erected upon a misapprehension or mistake in the symptomes of vision, men confounding abolishment, diminution and depravement, and naming that an abolition of sight, which indeed is but an abatement. For if vision be abolished, it is called *cæcitas*, or blindnesse, if depraved and receive its objects erroneously, Hallucination, if dimished, *hebetudo visus*, *caligatio*, or dimnesse; now instead of a diminution or imperfect vision in the Moll, we affirme an abolition or totall privation, in stead of caligation or dimnesse, wee conclude a cecity or blindnesse, which hath beene frequently committed concerning other animals; so some affirme the water Rat is blinde, so Sammonicus and Nicander do call the Mus-Araneus the shrew or Ranny, blinde; And because darkenesse was before light, the Ægyptians worshipped the same: So are slow-Wormes accounted blinde, and the like we affirme proverbially of the Beetle, although their eyes be evident, and they will flye against lights, like many other insects, and though also Aristotle determines, that the eyes are apparent in all flying insects, though other senses be obscure, and not perceptible at all; and if from a diminution wee may inferre a totall privation, or affirme that other animals are blinde which doe not acutely see or comparatively unto others, wee shall condemne unto blindenesse many not so esteemed; for such as have corneous or horney eyes, as Lobsters and crustaceous animals, are generally dim sighted, all insects that have *antennæ*, or long hornes to feele out their way, as Butter-flies and Locusts, or their fore legs so disposed, that they much advance before their heads, as may be observed in Spiders; and if the Ægle were judge, wee might be blinde our selves; the expression therefore of Scripture in the story of Jacob is surely with circumspection, And it came to passe when Jacob was old, and his eyes were dimme, *quando caligarunt oculi*, saith Jerom and Tremellius, which are expressions of diminution, and not of absolute privation.

Chap. XIX.

Of Lampries.

WHether Lampries have nine eyes, as is received, we durst refer it unto Polyphemus, who had but one to judge it: an error concerning eyes, occasioned by the errour of eyes, deduced from the appearance of divers cavities or holes on either side, which some call eyes that carelesly behold them, and is not onely refutable by experience, but also repugnant unto reason; for beside the monstrosity they fasten unto Nature, in contriving many eyes, who hath made but two unto

any animall, that is, one of each ſide, according to the diviſion of the braine, it were a ſuperfluous and inartificiall act to place and ſettle ſo many in one place; for the two extremes would ſufficiently performe the office of ſight without the help of the intermediate eyes, and behold as much as all ſeven joyned together; for the viſible baſe of the object would be defined by theſe two, and the middle eyes although they behold the ſame thing, yet could they not behold ſo much thereof as theſe; ſo were it no advantage unto man to have a third eye betweene thoſe two he hath already; and the fiction of Argus ſeemes more reaſonable then this; for though he had many eyes, yet were they placed in circumference and poſitions of advantage.

Againe, theſe cavities which men call eyes are ſeated out of the head, and where the Gils of other fiſh are placed, containing no organs of ſight, nor having any communication with the braine; now all ſenſe proceeding from the braine, and that being placed (as Galen obſerveth) in the upper part of the body, for the fitter ſituation of the eyes, and conveniency required unto ſight, it is not reaſonable to imagine that they are any where elſe, or deſerve that name which are ſeated in other parts; and therefore we relinquiſh as fabulous what is delivered of Sternopthalmi, or men with eyes in their breaſt; and when it is ſaid by Solomon, A wiſe mans eyes are in his head, it is to be taken in ſecond ſence, and affordeth no objection: True it is that the eyes of animals are ſeated with ſome difference, but all whatſoever in the head, and that more forward then the eare or hole of hearing. In quadrupedes, in regard of the figure of their heads, they are placed at ſome diſtance, in latiroſtrous and flat-bild birds they are more laterally ſeated; and therefore when they looke intently they turne one eye upon the object, and can convert their heads to ſee before and behinde, and to behold two oppoſite points at once; but at a more eaſie diſtance are they ſituated in man, and in the ſame circumference with the eare, for if one foote of the compaſſe be placed upon the Crowne, a circle deſcribed thereby will interſect, or paſſe over both the eares.

The error in this conceit conſiſts in the ignorance of theſe cavities, and their proper uſe in nature; for this is a particular diſpoſure of parts, and a peculiar conformation whereby theſe holes and ſluces ſupply the defect of Gils, and are aſſiſted by the conduit in the head; for like cetaceous animals and Whales, the Lamprey hath a fiſtula ſpout or pipe at the back part of the head, whereat they ſpirt out water: Nor is it onely ſingular in this formation, but alſo in many other, as in defect of bones, whereof it hath not one, and for the ſpine or back-bone, a cartilagineous ſubſtance without any ſpondyles, proceſſes, or protuberance whatſoever; as alſo in the proviſion which Nature hath made for the heart, which in this animall is very ſtrangely ſecured, and lyes immured in a cartilage or griſtly ſubſtance; and laſtly, in the colour of

of the liver, which is in the male of an excellent grasse greene, but of a deeper colour in the female, and will communicate a fresh and durable verdure.

Chap. XX.

Of Snayles.

That Snayles have two eyes, and at the end of their hornes, beside the assertion of the people, is the opinion of some learned men; which notwithstanding Scaliger tearmes but imitation of eyes, which Pliny contradicts, and Aristotle upon consequence denyes, when he affirmes that testaceous animals have no eyes at all; And for my owne part after much inquiry, I am not satisfied that these are eyes, or that those black and atramentous spots which seeme to represent them are any ocular reallities; for if any object be presented unto them, they will sometime seeme to decline it, and sometime run against it; if also these black extremities, or presumed eyes be clipped off, they will notwithstanding make use of their protrusions or hornes, and poke out their way as before: Againe, if they were eyes or instruments of vision, they would have their originals in the head, and from thence derive their motive and optick organs, but their roots and first extremities are seated low upon the sides of the back, as may be perceived in the whiter sort of Snayles when they retract them: And lastly, if wee concede they have two eyes, wee must also grant, they have no lesse then foure, for not onely the two greater extensions above have these imitations of eyes, but also the two lesser below, as is evident unto any, and if they be dextrously dissected, there will be found on either side two black filaments or membranous strings which extend into the long and shorter cornicle upon protrusion; and therefore if they have two eyes, they have also foure, which will be monstrous, and beyond the affirmation of any.

Now the reason why we name these black strings eyes, is because we know not what to call them else, and understand not the proper use of that part, which indeed is very obscure, and not delivered by any, but may probably be said to assist the protrusion, and retraction of their hornes, which being a weake and hollow body, requite some inward establishment, to confirme the length of their advancement, which we observe they cannot extend without the concurrence hereof; for if with your finger you apprehend the top of the horne, and draw out this black, and membranous emission, the horne will be excluded no more; but if you clip off the extremity, or onely sindge the top thereof with *Aqua fortis*, or other corrosive water, leaving a considerable part behinde, they will nevertheless exclude their hornes,

and therewith explorate their way as before; and indeed the exact sense of these extremities is very remarkable; for if you dip a pen in *Aqua fortis*, oyle of vitriol, or Turpentine, and present it towards these points, they will at a reasonable distance, decline the acrimony thereof, retyring or distorting them to avoid it; and this they will nimbly performe if objected to the extremes, but slowly or not at all, if approached unto their rootes.

What hath beene therefore delivered concerning the plurality, paucity, or anomalous situation of eyes, is either monstrous, fabulous, or under things never seene includes good sense or meaning: and so may we receive the figment of Argus, who was an Hieroglyphick of heaven, in those centuries of eyes expressing the stars; and their alternate wakings, the vicissitude of day and night; which strictly taken cannot be admitted, for the subject of sleep is not the eye, but the common sense, which once asleep, all eyes must be at rest: And therefore what is delivered as an Embleme of vigilancy, that the Hare and Lion doe sleep with one eye open, doth not evince they are any more awake then if they were both closed; for the open eye beholds in sleepe no more then that which is closed, and no more one eye in them then two in other animals that sleep with both open, as some by disease, and others naturally which have no eye lids at all.

As for Polyphemus although his story be fabulous, the monstrosity is not impossible; for the act of Vision may be performed with one eye, and in the deception and fallacy of sight, hath this advantage of two, that it beholds not objects double, or sees two things for one; for this doth happen when the axis of the visive coves, diffused from the object, fall not upon the same plane, but that which is conveyed into one eye, is more depressed or elevated then that which enters the other. So if beholding a candle we protrude either upward or downeward the pupill of one eye, the object will appeare double; but if wee shut the other eye, and behold it but with one, it will then appeare but single, and if we abduce the eye unto either corner, the object will not duplicate, for in that position the axes of the coves remaine in the same plane, as is demonstrated in the opticks, and delivered by Galen, in his tenth *De usu partium.*

Relations also there are of men that could make themselves invisible, which belongs not to this discourse, but may serve as notable expressions of wise and prudent men, who so contrive their affaires, that although their actions be manifest, their designes are not discoverable: in this acception there is nothing left of doubt, and Giges ring remaineth still among us; for vulgar eyes behold no more of wise men then doth the Sun, they may discover their exteriour and outward wayes, but their interiour and inward pieces he onely sees, that sees beyond their beings.

CHAP.

Chap. XXI.

Of the Cameleon.

CONcerning the Chameleon there generally passeth an opinion that it liveth onely upon ayre, and is sustained by no other aliment; Thus much is in plaine termes affirmed by Solinus, Pliny, and divers other, and by this periphrasis is the same described by Ovid; All which notwithstanding upon enquiry, I finde the assertion mainly controvertible, and very much to faile in the three inducements of belief.

And first for its verity, although asserted by some, and traditionally delivered by others, yet is it very questionable. For beside Ælian, who is seldome defective in these accounts; Aristotle distinctly treating hereof, hath made no mention of this remarkeable propriety; which either suspecting its verity, or presuming its falsity hee surely omitted; for that he remained ignorant of this account it is not easily conceivable, it being the common opinion, and generally received by all men: Some have positively denyed it, as *Augustinus*, *Niphus*, *Stobæus*, *Dalechampius*, *Fortunius*, *Licetus*, with many more; others have experimentally refuted it, as namely *Iohannes Landius*, who in the relation of Scaliger, observed a Chameleon to lick up a flye from his breast; But *Bellonius* hath beene more satisfactorily experimentall, not onely affirming they feede on Flyes, Caterpillers, Beetles, and other insects, but upon exenteration he found these animals in their bellies; and although we have not had the advantage of our owne observation, yet have we received the like confirmation from many ocular spectators.

As touching the verisimility or probable truth of this relation, severall reasons there are which seeme to overthrow it; For first, there are found in this animall, the guts, the stomack, and other parts officiall unto nutrition, which were its aliment the empty reception of ayre, their provisions had beene superfluous; Now the wisdome of Nature abhorring superfluities, and effecting nothing in vaine, unto the intention of these operations, respectively contriveth the organs; and therefore where we finde such Instruments, wee may with strictnesse expect their actions, and where we discover them not, wee may with safety conclude the non-intention of their operations: So when we observe that oviperous animals, as Lizards, Frogs, Birds, and most Fishes have neither bladder nor kidnies, we may with reason inferre they do not urine at all: But whereas in this same kinde we discover these parts in the Tortoys beyond any other, wee cannot deny he exerciseth that excretion; Nor was there any absurdity in Pliny, when for medicinall uses he commended the urine of a Tortoise: so when we perceive that Bats have teats, it is not unreasonable to infer they suckle their young-

lings

lings with milke; but whereas no other flying animall hath theſe parts, we cannot from them expect a viviparous excluſion, but either a generation of egges, or ſome vermiparous ſeparation, whoſe navell is within it ſelfe at firſt, and its nutrition after not inwardly dependent of its originall.

Againe, nature is ſo farre from leaving any one part without its proper action, that ſhe oft-times impoſeth two or three labours upon one; ſo the pizell in animals is both officiall unto urine and to generation, but the firſt and primary uſe is generation; for many creatures enjoy that part which urine not, as fiſhes, birds, and quadrupeds oviparous; but not on the contrary, for the ſecondary action ſubſiſteth not alone, but in concommitancie with the other; ſo the noſtrills are uſefull both for reſpiration and ſmelling, but the principall uſe is ſmelling; for many have noſtrills which have no lungs, as fiſhes, but none have lungs or reſpiration, which have not ſome ſhew, or ſome analogy of noſtrills: And thus we perceive the providence of nature, that is the wiſdome of God, which diſpoſeth of no part in vaine, and ſome parts unto two or three uſes, will not provide any without the execution of its proper office, nor where there is no digeſtion to be made, make any parts inſervient to that intention.

Beſide the teeth, the tongue of this animall is a ſecond argument to overthrow this ayrie nutrication, and that not only in its proper nature, but alſo in its peculiar figure; for indeed of this part properly taken there are two ends; that is, the formation of the voice, and the execution of taſte; for the voice, it can have no office in Camelions, for they are mute animals, as, beſide fiſhes, are moſt other ſort of Lizards: As for their taſte, if their nutriment be ayre, neither can it be an inſtrument thereof; for the body of that element is inguſtible, void of all ſapidity, and without any action of the tongue, is by the rough artery or weazon conducted into the lungs: and therefore Plinie much forgets the ſtrictneſſe of his aſſertion, when he alloweth excrements unto that animall, that feedeth only upon ayre, which notwithſtanding with the urine of an Aſſe, hee commends as a magicall medicine upon our enemies.

The figure of the tongue ſeems alſo to overthrow the preſumption of this aliment, which according to the exact delineation of Aldrovand, is in this animall peculiar, and ſeemeth contrived for prey; for in ſo little a creature it is at the leaſt halfe a palme long, and being it ſelf very ſlow of motion, hath in this part a very great agility, withall its food being flyes and ſuch as ſuddenly eſcape, it hath in the tongue a ſpongy and mucous extremity, whereby upon a ſudden emiſſion, it inviſcates and tangleth thoſe inſects: And therefore ſome have thought its name not unſutable unto its nature; the nomination is Greek, χαμαιλέων, that is a little Lion, not ſo much for the reſemblance of ſhape, but affinity of con-

condition, that is for the vigilancy in its prey and ſudden rapacity thereof, which it performeth not like the Lion with its teeth, but a ſudden and unexpected ejaculation of the tongue. This expoſition is favoured by ſome, eſpecially the old gloſſe upon Leviticus, whereby in the Tranſlation of Jerome and the Septuagint, this animall is forbidden; what ever it be, it ſeems more reaſonable then that of Iſidore, who derives this name, a *Camelo & Leone*, as preſuming herein ſome reſemblance with a Camell; for this derivation offendeth the rules of Etymology, wherein indeed the notation of names ſhould be Orthographicall, not exchanging dipthongs for vowells, or converting conſonants into each other.

As for the poſſibility hereof, it is not alſo unqueſtionable, and many wiſe men are of opinion, the bodies of animalls cannot receive a proper aliment from ayre: for beſide that taſte being (as Ariſtotle termes it) a kinde of touch, it is required the aliment ſhould be tangible, and fall under the palpable affections of touch; beſide alſo that there is ſome ſapor in all aliments, as being to be diſtinguiſhed and judged by the guſte, which cannot be admitted in ayre; Beſide theſe, I ſay, if wee conſider the nature of aliment, and the proper uſe of ayre in reſpiration, it will very hardly fall under the name hereof, or properly attaine the act of nutrication.

And firſt concerning its nature, to make a perfect nutrition into the body nouriſhed, there is required a tranſmutation of the nutriment; now where this converſion or aggeneration is made, there is alſo required in the aliment a familiarity of matter, and ſuch a community or vicinity unto a living nature, as by one act of the ſoule may be converted into the body of the living, and enjoy one common ſoule; which indeed cannot be effected by the ayre, it concurring only with our fleſh in common principles, which are at the largeſt diſtance from life, and common alſo unto inanimated conſtitutions; and therefore when it is ſaid by Fernelius, and aſſerted by divers others, that we are only nouriſhed by living bodies, and ſuch as are ſome way proceeding from them, that is the fruits, effects, parts, or ſeeds thereof, they have laid out an object very agreeable unto aſſimulation; for theſe indeed are fit to receive a quick and immediate converſion, as holding ſome community with our ſelves, and containing approximate diſpoſition unto animation.

Secondly (as is argued by Ariſtotle againſt the Pythagoreans) whatſoever properly nouriſheth, before its aſſimulation, by the action of naturall heat it receiveth a compulency or incraſſation progreſſionall unto its converſion; which notwithſtanding it cannot be effected upon the ayre, for the action of heat doth not condenſe but rarifie that body, and by attenuation, rather then for nutrition, diſpoſeth it for expulſion.

Thirdly,

Thirdly (which is the argument of Hippocrates) all aliment received into the body, muſt be therein a conſiderable ſpace retained, and not immediatly expelled: now ayre but momentally remaining in our bodies, it hath no proportionable ſpace for its converſion, that being only of length enough to refrigerate the heart, which having once performed, leſt being it ſelfe heated againe, it ſhould ſuffocate that part, it maketh no ſtay, but haſteth backe the ſame way it paſſed in.

Fourthly, the proper uſe of ayre attracted by the lungs, and without which there is no durable continuation in life, is not the nutrition of parts, but the contemperation of that fervour in the heart, and the ventilation of that fire alwayes maintained in the forge of life; whereby although in ſome manner it concurreth unto nutrition, yet can it not receive the proper name of nutriment; and therefore by Hippocrites *de alimento*, it is tetmed *Alimentum non Alimentum*, a nouriſhment and no nouriſhment; that is in a large acception, but not in propriety of language conſerving the body, not nouriſhing the ſame, not repairing it by aſſimulation, but preſerving it by ventilation; for thereby the naturall flame is preſerved from extinction, and ſo the individuum ſupported in ſome way like nutrition: And ſo when it is ſaid by the ſame Author, *Pulmo contrarium corpori alimentum trahit, reliqua omnia idem*, it is not to be taken in a ſtrict and proper ſenſe, but the quality in the one, the ſubſtance is meant in the other; for ayre in regard of our naturall heat is cold, and in that quality contrary unto it, but what is properly aliment, of what quality ſoever, is potentially the ſame, and in a ſubſtantiall identity unto it.

And although the ayre attracted may be conceived to nouriſh that inviſible flame of life, in as much as common and culinary flames are nouriſhed by the ayre about them; I confeſſe wee doubt the common conceit, which affirmeth that aire is the pabulous ſupply of fire, much leſſe that flame is properly aire kindled: And the ſame before us, hath been denyed by the Lord of Verulam, in his Tract of life and death, & alſo by Dr. Jorden in his book of Minerall waters: For that which ſubſtantially maintaineth the fire, is the combuſtible matter in the kindled body, and not the ambient ayre, which affordeth exhalation to its fuliginous atomes, nor that which cauſeth the flame properly to be termed ayre, but rather as he expreſſeth it, the accention of fuliginous exhalations, which containe an unctuoſity in them, and ariſe from the matter of fuell; which opinion is very probable, and will ſalve many doubts, whereof the common conceit affordeth no ſolution.

As firſt, how fire is ſtrickē out of flints, that is not by kindling the aire from the colliſion of two hard bodies; for then Diamonds and glaſſe ſhould doe the like as well as flint, but rather from the ſulphur and inflamable effluviums contained in them. The like ſaith Jorden we obſerve in canes and woods, that are unctuous and full of oyle, which will

will yeeld fire by frication, or colliſion, not by kindling the ayre about them, but the inflamable oyle with them: why the fire goes out without ayre? that is becauſe the fuligenous exhalations wanting evaporation recoyle upon the flame and choake it, as is evident in cupping glaſſes, and the artifice of charcoals, where if the ayre be altogether excluded, the fire goes out, why ſome lampes included in cloſe bodies, have burned many hundred yeares, as that diſcovered in the ſepulchre of Tullia the ſiſter of Cicero, and that of Olibius many yeares after, neare Padua; becauſe what ever was their matter, either a preparation gold, or Naptha, the duration proceeded from the puritie of their oyle which yeelded no fuligenous exhalations to ſuffocate the fire; For if ayre had nouriſhed the flame, it had not continued many minutes, for it would have been ſpent and waſted by the fire: Why a piece of flaxe will kindle, although it touch not the flame? becauſe the fire extendeth further, then indeed it is viſible, being at ſome diſtance from the weeke a pellucide and tranſparent body, and thinner then the ayre it ſelf: why mettals in their liquation, although they intenſly heat the aire above their ſurface, ariſe not yet into a flame, nor kindle the aire about them? becauſe their ſulphur is more fixed, and they emit not inflamable exhalations: And laſtly, why a lampe or candle burneth onely in the ayre about it, and inflameth not the ayre at a diſtance from it? becauſe the flame extendeth not beyond the inflamable effluence, but cloſly adheres unto the originall of its inflamation, and therefore it onely warmeth, not kindleth the aire about it, which notwithſtanding it will doe, if the ambient aire be impregnate with ſubtile inflamabilities, and ſuch as are of quick accenſion, as experiment is made in a cloſe roome, upon an evaparation of ſpirits of wine and Camphir; as ſubterraneous fires doe ſometimes happen, and as Creuſa and Alexanders boy in the bath were ſet on fire by Naptha.

Laſtly, the Element of aire is ſo far from nouriſhing the bodie, that ſome have queſtioned the power of water; many conceiving it enters not the body in the power of aliment, or that from thence, there proceeds a ſubſtantiall ſupply: For beſide that ſome creatures drinke not at all, unto others it performs the common office of ayre, and ſerves for refrigeration of the heart, as unto fiſhes, who receive it, and expell it by the gills; even unto our ſelves, and more perfect animals, though many wayes aſſiſtent thereto, it performes no ſubſtantiall nutrition, in ſerving for refrigeration, dilution of ſolid aliment, and its elixation in the ſtomacke, which from thence as a vehicle it conveighs through leſſe acceſſible cavities into the liver, from thence into the veines, and ſo in a roride ſubſtance through the capillarie cavities into every part; which having performed, it is afterward excluded by urine, ſweat and ſerous ſeparations. And this opinion ſurely poſſeſſed the Ancients, for when they ſo highly commended that water which is ſuddenly hot and cold,

which is without all savour, the lighteſt, the thinneſt, and which will ſooneſt boile Beanes or Peaſe, they had no conſideration of nutrition; whereunto had they had reſpect, they would have ſurely commended groſſe and turbid ſtreames, in whoſe confuſion at the laſt, there might be contained ſome nutriment; and not jejune or limpid water, and nearer the ſimplicity of its Element.

All which conſidered, ſeverer heads will be apt enough to conceive the opinion of this animal, not much unlike unto that of the Aſtomi, or men without mouthes in Pliny, ſutable unto the relation of the Mares in Spaine, and their ſubventaneous conceptions, from the weſterne winde; and in ſome way more unreaſonable then the figment of Rabican the famous horſe in Arioſto, which being conceived by flame, and wind never taſted graſſe, or fed on any groſſer provender then ayre; for this way of nutrition was anſwerable unto the principles of his generation; which being not ayrie, but groſſe and ſeminall in the Chameleon, unto its conſervation there is required a ſolid paſture, and a food congenerous unto the principles of its nature.

The grounds of this opinion are many, The firſt obſerved by Theophraſtus, was the inflation or ſwelling of the body made in this animal upon inſpiration or drawing in its breath, which people obſerving, have thought it to feed upon ayre. But this effect is rather occaſioned upon the greatnes of its lungs, which in this animal are very large, and by their backward ſituation, afford a more obſervable dilatation, and though their lungs bee leſſe, the like inflation is alſo obſervable in Toads.

A ſecond is the continuall hiation or holding open its mouth, which men obſerving conceive the intention therof to receive the aliment of ayre; but this is alſo occaſioned by the greatnes of its lungs, for repletion whereof not having a ſufficient or ready ſupply by its noſtrils, it is enforced to dilate and hold open the jawes.

The third is the paucitie of blood obſerved in this animal, ſcarce at all to be found but in the eye, and about the heart; which defect being obſerved, inclined ſome into thoughts, that the ayre was a ſufficient maintenance for theſe exauguious parts. But this defect or rather paucity of blood, is alſo agreeable unto many other animals, whoſe ſolid nutriment wee doe not controvert, as may bee obſerved in other ſorts of Lizards, in Frogges, and divers Fiſhes, and therefore an Horſe-leech will hardly be made to faſten upon a fiſh, and wee doe not read of much blood that was drawn from Frogges by Mice in that famous battaile of Homer.

The laſt and moſt common ground which begat or promoted this opinion, is the long continuation hereof without any viſible food, which ſome precipitouſly obſerving, conclude they eate not any at all. It cannot be denyed it is (if not the moſt of any) a very abſtemious animall,

animall, and such as by reason of its frigidity, paucity of blood, and latitancy in the winter, (about which time the observations are often made) will long subsist without a visible sustentation: But a like condition may bee also observed in many other animals, for Lizards and Leeches, as we have made triall, will live some months without sustenance, and wee have included Snailes in glasses all winter, which have returned to feed againe in the spring: Now these notwithstanding, are not conceived to passe all their lives without food; for so to argue is fallacious, that is, *A minori ad majus*, *A dicto secundum quid ad dictum simpliciter*, and is moreover sufficiently convicted by experience, and therefore probably other relations are of the same verity, which are of the like affinity, as is the conceit of the Rhintace in Persia, the Cavis Levis of America, and the Manucodiata or bird of Paradise in India.

To assigne a reason of this abstinence in animals, or declare how without a supply there ensueth no destructive exhaustion, exceedeth the limits of my intention, and intention of my discourse. Fortunius Licetus in his excellent Tract, *De his qui diu vivunt sine alimento*, hath very ingeniously attempted it, deducing the cause hereof from an equall conformity of naturall heat and moisture, at least no considerable exuperancy in either; which concurring in an unactive proportion, the naturall heat consumeth not the moisture (whereby ensueth no exhaustion) and the condition of naturall moisture is able to resist the slender action of heat, (whereby it needeth no reparation) and this is evident in Snakes, Lizards, Snails, and divers other insects laritant many moneths in the yeare; which being cold creatures, containing a weak heat, in a crasse or copious humidity doe long subsist without nutrition: For the activity of the agent, being not able to overmaster the resistance of the patient, there will ensue no deperdition. And upon the like grounds it is, that cold and phlegmatick bodies, and (as Hippocrates determineth) that old men, will best endure fasting. Now the same harmony and stationary constitution, as it happeneth in many species, so doth it fall out sometime in Individualls; For wee read of many who have lived long time without aliment, and beside deceites and impostures, there may be veritable Relations of some, who without a miracle, and by peculiarity of temper, have far outfasted Elias.

Chap. XXII.

Of the Oestridge.

The common opinion of the Oestridge, Struthiocamelus, or Sparrow Camell conceives that it digesteth Iron; and this is confirmed by the affirmations of many; beside swarmes of others, Rhodiginus in his prelections taketh it for granted, Johannes Langius in his

Epiſtles pleadeth experiment for it, the common picture alſo confirmeth it which uſually deſcribeth this animall, with an horſhooe in its mouth; notwithſtanding upon enquiry we finde it very queſtionable, and the negative ſeemes moſt reaſonably entertained; whoſe verity indeed wee doe the rather deſire, becauſe hereby wee ſhall relieve our ignorance of one occult quality; for in the liſt thereof it is accounted, and in that notion imperiouſly obtruded upon us: For my owne part, although I have had the ſight of this animall, I have not had the opportunity of its experiment, but have received great occaſions of doubt, from learned diſcourſers thereon.

For Ariſtotle and Oppianus who have particularly treated hereof are ſilent in this ſingularity, either omitting it as dubious, or as the Comment ſaith, rejecting it as fabulous; Pliny ſpeaketh generally, affirming onely, the digeſtion is wonderfull in this animall; Ælian delivereth, that it digeſteth ſtones, without any mention of Iron; Leo Africanus, who lived in thoſe Countries wherein they moſt abound, ſpeaketh diminutively, and but halfe way into this aſſertion, *Surdum ac ſimplex animal eſt, quicquid invenit, abſque delectu, uſque ad ferrum devorat:* Fernelius in his ſecond booke *De abditis rerum cauſis*, extenuates it, and Riolanus in his Comment thereof poſitively denyes it: Some have experimentally refuted it, as *Albertus Magnus*, and moſt plainly of all other *Vlyſſes Aldrovandus*, whoſe words are theſe, *Ego ferri fruſta devorare, dum Tridenti eſſem, obſervavi, ſed quæ in cocta rurſus excerneret*, that is, at my being at Trent, I obſerved the Oeſtridge to ſwallow Iron, but yet to exclude it undigeſted againe.

Now beſide experiment, it is in vaine to attempt againſt it by Philoſophicall argument, it being an occult quality, which contemnes the law of Reaſon, and defends it ſelfe by admitting no reaſon at all; As for its poſſibility, we ſhall not at preſent diſpute, nor will we affirme that Iron ingeſted, receiveth in the ſtomack of the Oeſtridge no alteration whatſoever; but if any ſuch there be, we ſuſpect this effect rather from ſome way of corroſion, then any of digeſtion; not any liquid reduction or tendance to chilification by the power of naturall heate, but rather ſome attrition from an acide and vitriolous humidity in the ſtomack, which may abſterſe, and ſhave the ſcorious parts thereof; ſo ruſty Iron crammed downe the throate of a Cock, will become terſe and cleare againe in its gizard: So the Counter, which according to the relation of *Amatus*, remained a whole yeare in the body of a youth, and came out much conſumed at laſt; might ſuffer this diminution, rather from ſharpe and acide humours, then the ſtrength of naturall heate, as he ſuppoſeth. So ſilver ſwallowed and retained ſome time in the body will turne black, as if it had beene dipped in *Aqua fortis*, or ſome corroſive water; but Lead will remaine unaltered, for that mettall containeth in it a ſweet ſalt and manifeſt ſugar, whereby it reſiſteth ordinary

ordinary corrosion, and will not easily dissolve even in *Aqua fortis:* So when for medicall uses, wee take downe the filings of Iron or steele, we must not conceive it passeth unaltered from us; for though the grosser parts be excluded againe, yet are the volatile and dissoluble parts extracted, whereby it becomes effectuall in deopilations; and therefore for speedier operation we make extinctions, infusions, and the like, whereby we extract the salt and active parts of the medicine, which being in solution, more easily enter the veynes. And this is that the Chymists mainely drive at in the attempt of their *Aurum potabile*, that is, to reduce that indigestible substance into such a forme as may not be ejected by seidge, but enter the cavities, and lesse accessible parts of the body, without corrosion.

The ground of this conceit is its swallowing downe fragments of Iron, which men observing, by a forward illation, have therefore conceived it digesteth them; which is an inference not to be admitted, as being a fallacy of the consequent, that is, concluding a position of the consequent, from the position of the antecedent: For many things are swallowed by animals, rather for condiment, gust, or medicament, then any substantiall nutriment. So Poultrey, and especially the Turkey, do of themselves take downe stones, and wee have found at one time in the gizard of a Turkey no lesse then seven hundred: Now these rather concurre unto digestion, then are themselves digested, for we have found them also in the guts, and excrements, but their discent is very slow, for we have given them in paste, stones and smal pieces of Iron, which eighteene dayes after we have found remaining in the gizard; and therefore the experiment of Langius and others might bee mistaken, whilst after the taking they expected it should come downe within a day or two after: Thus also we swallow cherry-stones, but void them unconcocted, and we usually say they preserve us from surfeit, for being hard bodies they conceive a strong and durable heate in the stomack, and so prevent the crudities of their fruit; And upon the like reason do culinary operators observe that flesh boyles best, when the bones are boyled with it: Thus dogs will eate grasse, which they digest not: Thus Camels to make the water sapide do raise the mud with their feet: thus horses will knabble at walls, Pigeons delight in salt stones, Rats will gnaw Iron, and Aristotle saith the Elephant swalloweth stones; and thus may also the Oestridge swallow Iron, not as his proper aliment, but for the ends above expressed, and even as we observe the like in other animals.

What effect therefore may bee expected from the stomack of an Oestridge by application alone to further digestion in ours, beside the experimentall refute of Galen, wee referre it unto the considerations above alledged; or whether there be any more credit to be given unto the medicine of Ælian, who affirmes the stones they swallow have

a peculiar vertue for the eyes, then that of Hermolaus and Pliny drawne from the urine of this animall, let them determine who can ſwallow ſo ſtrange a tranſmiſſion of qualities, or beleeve that any Bird or flying animall doth urine beſide the Bat.

Chap. XXIII.

Of Unicornes hornes.

GReat account and much profit is made of Unicornes horne, at leaſt of that which beareth the name thereof, wherein notwithſtanding, many I perceive ſuſpect an Impoſture, and ſome conceive there is no ſuch animall extant: herein therefore to draw up our determinations, beſide the ſeverall places of Scripture mentioning this animall (which ſome perhaps may contend to be onely meant of the Rhinoceros) wee are ſo farre from denying there is any Unicorne at all, that wee affirme there are many kinds thereof, in the number of Quadrupedes, wee will concede no leſſe then five; that is, the Indian Oxe, the Indian Aſſe, the Rhinoceros, the Oryx, and that which is more eminently termed *Monoceros*, or *Vnicornis*: Some in the liſt of fiſhes, as that deſcribed by Olaus, Albertus, and many other: and ſome Unicornes wee will allow even among inſects; as thoſe foure kinds of naſicornous Beetles deſcribed by Muffetus.

Secondly, although we concede there be many Unicornes, yet are we ſtill to ſeeke; for whereunto to affixe this horne in queſtion, or to determine from which thereof we receive this magnified medicine, we have no aſſurance, or any ſatisfactory deciſion: for although we ſingle out one, and Antonomaſtically thereto aſſigne the name of the Unicorne, yet can we not be ſecure what creature is meant thereby, what conſtant ſhape it holdeth, or in what number to be received: For as far as our endeavours diſcover, this animall is not uniformely deſcribed, but differently ſet forth by thoſe that undertake it: Pliny affirmeth it is a fierce and terrible creature, *Vartomannus* a tame and manſuete animall: thoſe which *Garcias ab Horto* deſcribed about the cape of good hope, were beheld with heads like horſes; thoſe which Vartomannus beheld, he deſcribed with the head of a Deere; Pliny, Ælian Solinus, and after theſe from ocular aſſurance *Paulus Venetus* affirmeth the feet of the Unicorne are undivided, and like the Elephants: But thoſe two which Vartomannus beheld at Mecha, were as he deſcribeth footed like a Goate: As Ælian deſcribeth, it is in the bigneſſe of an horſe, as Vartomannus of a Colt, That which Thevet ſpeaketh of was not ſo big as an Heifer; But *Paulus Venetus* affirmeth, they are but little leſſe then Elephants; which are diſcriminations very materiall, and plainly declare, that under the ſame name Authors deſcribe not the

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ſame animall: So that the Unicornes horne of the one, is not that of another, although we proclaime an equall vertue in either.

Thirdly, although we were agreed what animall this was, or differed not in its deſcription, yet would this alſo afford but little ſatisfaction, for the horne we commonly extoll, is not the ſame with that of the Ancients; For that in the deſcription of Ælian and Pliny was blacke, this which is ſhewed amongſt us is commonly white, none black; and of thoſe five which Scaliger beheld, though one ſpadiceous, or of a light red, and two inclining to red, yet was there not any of this complexion among them.

Fourthly, what hornes ſoever they be which paſſe amongſt us, they are not ſurely the hornes of any one kinde of animall, but muſt proceed from ſeverall ſorts of Unicornes; for ſome are wreathed, ſome not: That famous one which is preſerved at S. Dennis neere Paris, hath awfractuous ſpires, and chocleary turnings about it, which agreeth with the deſcription of the Unicornes horne in Ælian; Thoſe two in the treaſure of S. Mark are plaine, and beſt accord with thoſe of the Indian Aſſe, or the deſcriptions of other Unicornes: *Albertus Magnus* deſcribeth one ten foote long, and at the baſe about thirteene inches compaſſe; And that of Antwerpe which *Goropius Becanus* deſcribeth, is not much inferiour unto it; which beſt agree unto the deſcriptions of the Sea-Unicornes, for theſe, as Olaus affirmeth, are of that ſtrength and bigneſſe, as able to penetrate the ribs of ſhips; the ſame is more probable, in that it was brought from Iſland, from whence, as *Becanus* affirmeth, three other were brought in his dayes; And we have heard of ſome which have beene found by the ſea ſide, and brought unto us from America: So that while we commend the Unicornes horne, and conceive it peculiar but unto one animall, under apprehenſion of the ſame virtue, wee uſe very many, and commend that effect from all, which every one confineth unto ſome one, hee hath either ſeene or deſcribed.

Fifthly, although there be many Unicornes, and conſequently many hornes, yet many there are which beare that name, and currantly paſſe among us, which are no hornes at all; and ſuch are thoſe fragments, and pieces of *Lapis Ceratites*, commonly termed *Cornuſoſſile*, whereof *Boetius* had no leſſe then twenty ſeverall ſorts preſented him for Unicorns horn: hereof in ſubterraneous cavities, & under the earth there are many to be found in ſeverall parts of Germany, which are but the Lapideſcencies, and petrifactive mutations of hard bodies, ſometime of horne, of teeth, of bones, and branches of trees, whereof there are ſome ſo imperfectly converted, as to retaine the odor and qualities of their originals, as he relateth of pieces of Aſhe and Wallnut. Againe, in moſt if not all which paſſe amongſt us, and are extolled for precious hornes, wee diſcover not one affection common unto other hornes,

hornes, that is, they mollifie not with fire, they ſoften not upon decoction, or infuſion, nor will they afford a jelly, or muccilaginous concretion in either; which notwithſtanding wee may effect in Goates hornes, Sheepes, Cows, and Harts horne, in the horne of the Rhinoceros, the horne of the Priſtis or Sword-fiſh. Briefly that which is commonly received, and whereof there be ſo many fragments preſerved in England, is not onely no horne, but a ſubſtance harder then a bone, that is, the tooth of a Morſe or Sea-horſe, in the midſt of the ſolider part containing a curdled graine, which is not to be found in Ivory; this in Northerne regions is of frequent uſe for hafts of knives, or hilts of ſwords, and being burnt becomes a good remedy for fluxes: but antidotically uſed, and expoſed for Unicornes horne, it is an inſufferable deluſion, and with more veniable deceit, it might have beene practiſed in Harts horne.

Sixtly, although we were ſatisfied we had the Unicornes horne, yet were it no injury unto reaſon to queſtion the efficacy thereof, or whether thoſe virtues which are pretended do properly belong unto it; for what we obſerve (and it eſcaped not the obſervation of *Paulus Iovius* many years paſt) none of the Ancients aſcribed any medicinall or antidotall virtue unto the Unicornes horne; and that which Ælian extolleth, who was the firſt and onely man of the Ancients who ſpake of the medicall virtue of any Unicorne, was the horne of the Indian Aſſe, whereof, ſaith he, the Princes of thoſe parts make boales and drinke therein, as preſervatives againſt poyſon, Convulſions, and the Falling-ſickneſſe; Now the deſcription of that horne is not agreeable unto that we commend; for that (ſaith he) is red above, white below, and black in the middle, which is very different from ours, or any to bee ſeene amongſt us; And thus, though the deſcription of the Unicorne be very ancient, yet was there of old no virtue aſcribed unto it, and although this amongſt us receive the opinion of the ſame virtue, yet is it not the ſame horne whereunto the Ancients aſcribed it.

Laſtly, although we allow it an Antidotall efficacy, and ſuch as the Ancients commended, yet are there ſome virtues aſcribed thereto by Modernes not eaſily to be received; and it hath ſurely falne out in this as other magnified medicines, whoſe operations effectuall in ſome diſeaſes, are preſently extended unto all: That ſome antidotall quality it may have wee have no reaſon to deny; for ſince Elkes hoofes and hornes are magnified for Epilepſies, ſince not onely the bone in the heart, but the horne of a Deere is Alexipharmacall, and ingredient into the confection of Hyacinth, and the Electuary of Maximilian, wee cannot without prejudice except againſt the efficacy of this: But when we affirme it is not onely Antidotall to proper venomes, and ſubſtances deſtructive by qualities, we cannot expreſſe; but that it reſiſteth alſo Sublimate, Arſenick, and poyſons which kill by ſecond qualities, that

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is, by corrosion of parts, I doubt we exceed the properties of its nature, and the promises of experiment will not secure the adventure: And therefore in such extremities, whether there be not more probable reliefe from fat and oylie substances, which are the open tyrants of salt and corrosive bodies, then precious and cordiall medicines which operate by secret and disputable proprieties; or whether he that swallowed Lime, and dranke downe Mercury water, did not more reasonably place his cure in milke, butter, or oyle, then if he had recurred unto Pearle and Bezoar, common reason at all times, and necessity in the like case would easily determine.

Since therefore there be many Unicornes, since that whereto wee appropriate a horne is so variously described, that it seemeth either never to have beene seene by two persons, or not to have beene one animall; Since though they agreed in the description of the animall, yet is not the horne wee extoll the same with that of the Ancients; Since what hornes soever they be that passe among us, they are not the hornes of one but severall animals: Since many in common use and high esteeme are no hornes at all: Since if they were true hornes, yet might their vertues be questioned: Since though we allowed some vir tues, yet were not others to be received, with what security a man may rely on this remedy, the mistresse of fooles hath already instructed some, and to wisdome (which is never too wise to learne) it is not too late to consider.

Chap. XXIV.

That all Animals of the Land, are in their kinde in the Sea.

That all Animals of the Land, are in their kinde in the Sea, although received as a principle, is a tenent very questionable, and will admit of restraint; for some in the Sea are not to be matcht by any enquiry at Land, and hold those shapes which terrestrious formes approach not; as may be observed in the Moone fish, or Orthragoriscus, the severall sorts of Raia's, Torpedo's, Oysters, and many more; and some there are in the Land which were never maintained to be in the Sea, as Panthers, Hyæna's, Camels, Sheep, Molls, and others which carry no name in Ichthyologie, nor are to be found in the exact descriptions of Rondeletius, Gesner, or Aldrovandus.

Againe, though many there be which make out their nominations, as the Hedg-hog, Sea-serpents, and others; yet are there also very many that beare the name of animals at Land, which hold no resemblance in corporall configuration; in which account we compute *Vulpecula, Canis, Rana, Passer, Cuculus, Asellus, Turdus, Lepus, &c.* wherein while some are called the Fox, the Dog, the Sparrow, or Frog-fish,

and are knowne by common names with thoſe at land; as their deſcribers atteſt, they receive not theſe appellations, as we conceive, from a totall ſimilitude in figure, but any concurrence in common accidents, in colour, condition, or ſingle conformation: as for Sea-horſes which much confirme this aſſertion, in their common deſcriptions, they are but Croteſco deliniations which fill up empty ſpaces in Maps, and meere pictoriall inventions, not any Phyſicall ſhapes: ſutable unto thoſe which (as Plinie delivereth) Praxiteles long agoe ſet out in the Temple of Domitius: for that which is commonly called a Sea-horſe is properly called a Morſe, and makes not out that ſhape: That which the Ancients named Hippocampus is a little animall about ſix inches long, and not preferred beyond the claſſis of Inſects: that they tearmed Hippopotamus an amphibious animall, about the River Nile, ſo little reſembleth an horſe, that as Mathiolus obſerveth in all, except the feet, it better makes out a ſwine: that which they tearmed a Lion, was but a kinde of Lobſter: and that they called the Beare, was but one kinde of Crab, and that which they named Bos marinus, was not as we conceive a fiſh reſembling an Oxe, but a Skaite or Thornbacke, ſo named from its bigneſſe, expreſſed by the Greek word *Βους*, which is a prefixe of augmentation to many words in that language.

And therefore although it be not denied that ſome in the water doe carry a juſtifiable reſemblance to ſome at the Land, yet are the major part which beare their names unlike; nor doe they otherwiſe reſemble the creatures on earth, then they on earth the conſtellations which paſſe under animall names in heaven: nor the Dog-fiſh at ſea much more make out the Dog of the land, then that his cognominall or name-ſake in the heavens. Now if from a ſimilitude in ſome, it bee reaſonable to infer a correſpondency in all, we may draw this analogie of animalls upon plants; for vegetables there are which carry a neare and allowable ſimilitude unto animals, as we elſewhere declare: wee might alſo preſume to conclude that animall ſhapes were generally made out in mineralls: for ſeverall ſtones there are that beare their names in relation to animals parts, as Lapis anguinus, Conchites, Echinites, Eucephalites, Ægopthalmus, and many more, as will appeare in the writers of Mineralls, and eſpecially in Boetius.

Moreover if we concede, that the animalls of one Element, might beare the names of thoſe in the other, yet in ſtrict reaſon the watery productions ſhould have the prenomination: and they of the land rather derive their names, then nominate thoſe of the ſea: for the watery plantations were firſt exiſtent, and as they enjoyed a priority in forme, had alſo in nature precedent denominations: but falling not under that nomenclature of Adam, which unto terreſtrious animalls aſſigned a name appropriate unto their natures, from ſucceeding ſpectators they received arbitrary appellations, and were reſpectively denominated

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unto creatures knowne at land, which in themselves had independent names, and not to bee called after them, which were created before them.

Lastly, by this assertion wee restraine the hand of God, and abridge the variety of the creation; making the creatures of one Element, but an acting over those of an other, and conjoyning as it were the species of things which stood at distance in the intellect of God, and though united inthe Chaos, had several seeds of their creation: for although in that indistinguisht masse, all things seemed one, yet separated by the voyce of God, according to their species they came out in incommunicated varieties, and irrelative seminalities, as well as divided places; and so although we say the world was made in sixe dayes, yet was there as it were a world in every one, that is, a distinct creation of distinguisht creatures, a distinction in time of creatures divided in nature, and a severall approbation, and survey in every one.

Chap. XXV.

Compendiously of sundry Tenents concerning other Animals, which examined prove either false or dubious.

1. And first from times of great Antiquity, and before the Melodie of Syrens, the Musicall notes of Swans hath been commended, and that they sing most sweetly before their death. For thus we read in Plato *de Legibus*, that from the opinion of Melempsuchosis, or transmigration of the soules of men into the bodies of beasts most sutable unto their humane condition, after his death, Orpheus the Musician became a Swan. Thus was it the bird of Apollo the god of Musicke by the Greekes, and a Hieroglyphick of Musick among the Ægyptians, from whom the Greeks derived the conception, hath been the affirmation of many Latines, and hath not wanted assertors almost from every Nation.

All which notwithstanding we find this relation doubtfully received by Ælian, as an hearsay account by Bellonius, as a false one by Pliny, expresly refuted by Myndius in Athenæus, & severely rejected by Scaliger, whose words unto Cardan are these. *De Cygni vero cantu suavissimo quem cum parente mendaciorum Græcia jactare ausus es, ad Luciani tribunal, apud quem novi aliquid dicas, statue.* Authors also that countenance it, speak not satisfactorily of it. Some affirming they sing not till they die; some that they sing, yet die not; some speake generally, as though this note were in all; some but particularly, as though it were only in some; some in places remote, and where we can have no trial of it; others in places where every experience can refute it, as Aldrovand upon relation, delivered, concerning the Musicke of the Swans on the river of the Thames neer London.

This figuration to be found in Elkes, and not in common Swans.

Now that which countenanceth, and probably confirmeth this opinion, is the ſtrange and unuſuall conformation of the winde pipe, or vocall organ in this animall: obſerved firſt by Aldrovandus, and conceived by ſome contrived for this intention: for in its length it far exceedeth the gullet, and hath in the cheſt a ſinuous revolution, that is, when it ariſeth from the lunges, it aſcendeth not directly unto the throat, but aſcending firſt into a capſulary reception of the breaſt bone, by a Serpentine and Trumpet recurvation it aſcendeth againe into the neck, and ſo by the length thereof a great quantity of ayre is received, and by the figure thereof a muſicall modulation effected. But to ſpeak indifferently (what Aldrovand himſelf acknowledgeth) this formation of the Weazon, is not peculiar unto the Swan but common alſo, unto the Platea or Shovelard, a bird of no Muſicall throat; And as himſelfe confeſſeth may thus be contrived in the Swan to contain a larger ſtock of ayre, whereby being to feed on weeds at the bottom, they might the longer ſpace detain their heads under water. And indeed were this formation peculiar, or had they unto this effect an advantage from this part: yet have they a knowne and open diſadvantage from an other, which is not common unto any ſinging bird we know, that is a flat bill: For no Latiroſtrous animal (whereof nevertheleſſe there are no ſlender numbers) were ever commended for their note, or accounted among thoſe animals which have been inſtructed to ſpeake.

When therefore we conſider the diſſention of Authors, the falſity of relations, the indiſpoſition of the Organs, and the immuſicall note of all we ever beheld or heard of, if generally taken and comprehending all Swans, or of all places, we cannot aſſent thereto. Surely he that is bit with a Tarantula, ſhall never be cured by this Muſicke, and with the ſame hopes we expect to hear the harmony of the Spheres.

2. That there is a ſpeciall proprietie in the fleſh of Peacocks roſt or boiled, to preſerve a long time incorrupted, hath been the aſſertion of many, ſtands yet confirmed by Auſtine, *De Civitate Dei*, by Gygas Sempronius, in Aldrovand, and the ſame experiment we can confirme our ſelves, in the brawne or fleſhy parts of Peacocks ſo hanged up with thred, that they touch no place whereby to contract a moiſture; and hereof we have made triall both in the ſummer and winter. The reaſon ſome I perceive, attempt to make out from the ſiccity and drines of its fleſh, and ſome are content to reſt in a ſecret propriety thereof. As for the ſiccity of the fleſh, it is more remarkable in other animals, as Ægles, Hawkes, and birds of prey; And that it is a propriety, or agreeable unto none other, we cannot with reaſon admit: for the ſame preſervation, or rather incorruption we have obſerved in the fleſh of Turkeys, Capons, Hares, Partridge, Veniſon, ſuſpended freely in the ayre, and after a yeare and a halfe, dogs have not refuſed to eat them.

As for the other conceit that a Peacocke is aſhamed when he lookes

on

on his legges, as is commonly held, and also delivered by Cardan, beside what hath been said against it by Scaliger, let them beleeve that hold specificall deformities, or that any part can seeme unhansome to their eyes, which hath appeared good and beautifull unto their makers. The occasion of this conceit, might first arise from a common observation, that when they are in their pride, that is, advance their traine, if they decline their necke to the ground, they presently demit and let fall the same: which indeed they cannot otherwise doe, for contracting their body, and being forced to draw in their foreparts, to establish the hinder in the elevation of the traine, if the foreparts depart and incline to the ground, the hinder grow too weake, and suffer the traine to fall. And the same in some degree is also observeable in Turkyes.

3. That Storkes are to be found and will onely live in Republikes or free States, is a pretty conceit to advance the opinion of popular policies, and from Antipathies in nature, to disparage Monarchicall government. But how far agreeable unto truth, let them consider who read in Plinie, that among the Thessalians who were governed by Kings, and much abounded with Serpents, it was no lesse then capitall to kill a Storke. That the ancient Ægyptians honoured them, whose government was from all times Monarchicall. That Bellonius affirmeth, men make them nests in France. And lastly, how Jeremy the Prophet delivered himselfe unto his countreymen, whose government was at that time Monarchicall. *Milvus in Cœlo cognovit tempus suum. Turtur Hirundo & Ciconia custodierunt tempus adventus sui.* Wherein to exprobrate their Stupiditie, he induceth the providence of Storkes. Now if the bird had been unknown, the illustration had been obscure, and the exprobation but improper.

4. That a Bittor maketh that mugient noyse, or as we terme it Bumping by putting its bill into a reed as most beleeve, or as Bellonius and Aldrovand conceive, by putting the same in water or mud, and after a while retaining the ayre by suddenly excluding it againe, is not so easily made out. For my own part though after diligent enquiry, I could never behold them in this motion; Notwithstanding by others whose observations we have expresly requested, we are informed, that some have beheld them making this noise on the Shore, their bills being far enough removed from reed or water; that is, first strongly attracting the aire, and unto a manifest distention of the neck, and presently after with great Contention and violence excluding the same againe. As for what others affirme of putting their bill in water or mud, it is also hard to make out. For what may bee observed from any that walketh the Fenns, there is little intermission, nor any observable pawse, between the drawing in and sending forth of their breath. And the expiration or breathing forth doth not onely produce a noise, but the inspiration

ration or haling in of the ayre, affordeth a ſound that may bee heard almoſt a flight ſhoot.

Now the reaſon of this ſtrange and peculiar noiſe, is well deduced from the conformation of the windepipe, which in this birde is different from other volatiles. For at the upper extream it hath no Larinx, or throttle to qualifie the ſound, and at the other end, by two branches deriveth it ſelfe into the Lunges. Which diviſion conſiſteth onely of Semicircular fibers, and ſuch as attaine but half way round the part; By which formation they are dilatable into larger capacities, and are able to containe a fuller proportion of ayre, which being with violence ſent up the weazon, and finding no reſiſtance by the Larinx, it iſſueth forth in a ſound like that from cavernes, and ſuch as ſometimes ſubterraneous eruptions, from hollow rocks afford; As Ariſtotle obſerveth in a Problem of the 25. Section, and is obſervable in pichards, bottles, and that inſtrument which Aponenſis upon that probleme deſcribeth, wherewith in Ariſtotles time Gardiners affrighted birdes.

5. That whelps are blinde nine dayes and then begin to ſee, is the common opinion of all, and ſome will be apt enough to deſcend unto oathes upon it. But this I finde not anſwerable unto experience; for upon a ſtrict obſervation of many, I have not found any that ſee the ninth day, few before the twelfth, and the eyes of ſome will not open before the fourteenth day. And this is agreeable unto the determination of Ariſtotle: who computeth the time of their anopſie or inviſion by that of their geſtation; for ſome ſaith he do go with their yong, the ſixt part of a yeer, a day or two over or under, that is, about ſixty dayes or nine weekes, and the whelps of theſe ſee not till twelve dayes; ſome goe the fifth part of a yeer, that is, 71. dayes, and theſe ſaith he ſee not before the fourteenth day. Others doe goe the fourth part of a yeer, that is, three whole months, and theſe ſaith hee are without ſight no leſſe then ſeventeen dayes: wherein although the accounts be different, yet doth the leaſt thereof exceed the terme of nine dayes which is ſo generally receaved. And this compute of Ariſtotle doth generally overthrow, the common cauſe alleadged for this effect, that is, a precipitation or over haſty excluſion before the birth be perfect, according unto the vulgar Adage. *Feſtinans canis cæcos parit catulos*: for herein the whelps of longeſt geſtation, are alſo the lateſt in viſion. The manner hereof is this. At the firſt littering their eyes are faſtly cloſed, that is, by coalition or joyning together of the eyelids, and ſo continue untill about the twelfth day, at which time they begin to ſeparate, and may be eaſily divelled or parted aſunder; they open at the inward canthis, or greater angle of the eye, and ſo by degrees dilate themſelves quite open. An effect very ſtrange, and the cauſe of much obſcurity, wherein as yet mens enquiries are blinde, and ſatisfaction acquirable from no man. What ever it be, thus much we may obſerve, thoſe ani-

malls

malls are onely excluded without ſight, which are multiparous and multifidous, that is, which have many at a litter, and have alſo their feet divided into many portions: for the Swine although multiparous, yet being biſulcous, and onely cloven hoofed, is not excluded in this manner, but farrowed with open eyes, as other biſulcous animals.

6. The Antipathy between a Toad and a Spider, and that they poiſonouſly deſtroy each other is very famous, and ſolemne Stories have been written of their combats, wherein moſt commonly the victory is given unto the Spider. Of what Toades and Spiders it is to be underſtood, would be conſidered. For the Phalangium, and deadly Spiders, are different from thoſe we generally behold in England. However the verity hereof, as alſo of many others, wee cannot but deſire; for hereby wee might be ſurely provided of proper Antidotes in caſes which require them; But what we have obſerved herein, wee cannot in reaſon conceale, who having in a glaſſe included a Toad with ſeverall Spiders, wee beheld the Spiders without reſiſtance to ſit upon his head, and paſſe over all his body, which at laſt upon advantage hee ſwallowed down, and that in few houres to the number of ſeven. And in the like manner will Toades alſo ſerve Bees, and are accounted an enemy unto their Hives.

7. Whether a Lyon be alſo afraid of a Cock, as is related by many, and beleeved by moſt, were very eaſie in ſome places to make tryall. Although how far they ſtand in feare of that animal, we may ſufficiently underſtand, from what is delivered by Camerarius, whoſe words in his Symbola are theſe. *Noſtris temporibus in Aula ſereniſſimi Principis Bavariæ, unus ex Leonibus miris ſaltibus in vicinam cujuſdam domus aream ſeſe dimiſit, ubi Gallinacierum cantum aut clamores nihil reformidans ipſos una cum plurimis gallinis devoravit.* That is, in our time in the court of the Prince of Bavaria, one of the Lyons leaped downe into a neighbous yard, where nothing regarding the crowing or noiſe of the Cocks, hee eat them up with many other Hens. And therefore a very unſafe defenſative it is againſt the fury of this animal, and ſurely no better then Virginity, or blood Royall, which Pliny doth place in Cock broth: For herewith, ſaith he, who ever is anoynted (eſpecially if Garlick be boiled therein) no Lyon or Panther will touch him.

8. It is generally conceived, an earewigge hath no wings, and is reckoned amongſt impennous inſects by many, but hee that ſhall narrowly obſerve them, or ſhall with a needle put aſide the ſhort and ſheathie caſes on their backe, may extend and draw forth two winges of a proportionable length for flight, and larger then many flyes. The experiment of Pennius is yet more perfect, who with a ruſh or briſtle ſo pricked them as to make them flie.

9. That wormes are exanguious animalls, and ſuch as have no blood at all, is the determination of Philoſophy, the generall opinion of Scholers,

lers, and I know not well to dissent from thence my selfe: if so, surely wee want a proper terme whereby to expresse that humor in them which so strictly resembleth blood: and we refer it unto the discernment of others what to determine of that red and sanguineous humor, found more plentifully about the Torquis or carneous circle of great wormes in the spring, affording in linnen or paper an indiscernable tincture from blood; or wherein that differeth from a veyne, which in an apparent blew runneth along the body, and if dexterously pricked with a lancet emitteth a red drop, which pricked on either side it will not readily afford.

In the upper parts of wormes, there are likewise found certaine white and ovall glandulosities which Authors terme egs, and in magnifying glasses, they also represent them: how properly may also bee enquired; since if in them there be distinction of sexes, these egs are to be found in both. For in that which is presumed to bee their coition that is their usuall complication, or rather laterall adhesion above the ground, dividing suddenly with two knives the adhering parts of both, I have found these egges in either.

10. That Flyes, Bees, &c. doe make that noise or humming sound by their mouth, or as many beleeve with their wings only, would be more warily asserted, if we consulted the determination of Aristotle, who as in sundry other places, so more expressely, in his booke of respiration, affirmeth this sound to be made, by the allision of an inward spirit upon a pellicle, or little membrane about the precinct or pectorall division of their body. If we also consider that a Bee or Flye, so it be able to move the body, will buz though its head be off; that it will do the like if deprived of wings reserving the head whereby the body may be the better moved. And that some also which are big and lively will humme without either head or wing.

Nor is it only the beating upon this little membrane, by the inward and connaturall spirit as Aristotle determines, or the outward ayre as Scaliger conceiveth which affordeth this humming noise, but perhaps most of the other parts may also concurre hereto, as will be manifest if while they humme we lay our finger on the backe or other parts; for thereupon will be felt a serrous or jarring motion like that which happeneth while we blow on the teeth of a combe through paper; and so if the head or other parts of the trunke be touched with oyle, the sound will be much impaired, if not destroyed: for those being also dry and membranous parts, by attrition of the spirit doe helpe to advance the noyse: And therefore also the sound is strongest in dry weather, and very weake in rainy season, and toward winter; for then the ayre is moyst, and the inward spirit growing weake, makes a languid and dumbe allision upon the parts.

11. There is found in the Summer a kind of spider called a Taint of a red

red colour, and so little of body that ten of the largest will hardly outway a graine; this by Country people is accounted a deadly poyson unto cowes and horses, who, if they suddenly dye, and swell thereon, ascribe their death hereto, and will commonly say, they have licked a Tainct. Now to satisfie the doubts of men, we have called this tradition unto experiment; we have given hereof unto dogs, chickens, calves and horses, and not in the singular number, yet never could finde the least disturbance ensue. There must be therefore other causes enquired of the sudden death, and swelling of cattell, and perhaps this insect is mistaken, and unjustly accused for some other; for some there are which from elder times, have been observed pernicious unto cattell, as the Bupresti is or burstcow, the Pityocampe or cruca Pinuum, by Dioscorides, Galen and Ætius, the Staphilinus described by Aristotle and others, or those red Phalangious spiders like Cantharides mentioned by Muffetus. Now although the animall may be mistaken and the opinion also false, yet in the ground and reason which makes men most to doubt the verity hereof there may be truth enough, that is the small inconsiderable quantity of this insect. For that a poyson cannot destroy in so small a bulke, we have no reason to affirme. For if as Leo Africanus reporteth, the tenth part of a graine of the poyson of Nubia will dispatch a man in two houres, if the bite of a Viper and sting of a Scorpion, is not conceived to impart so much, if the bite of an Aspe will kill within an houre, yet the impression scarce visible, and the poyson communicated not ponderable, we cannot as impossible reject this way of destruction; or deny the power of death in so narrow a circumscription.

12. Wondrous things are promised from the Glow-worme, thereof perpetuall lights are pretended, and waters said to be distilled which afford a lustre in the night; and this is asserted by Cardan, Albertus, Gaudentius, Mizaldus and many others. But hereto we cannot with reason assent: for the light made by this animall depends upon a living spirit, and seems by some vitall irradiation to be actuated into this lustre. For when they are dead they shine not, nor alwayes while they live, but are obscure or light according to the diffusion of this spirit, and the protrusion of their luminous parts, as observation will instruct us; for this flammeous light is not over all the body, but only visible on the inward side, in a small white part neare the tayle. When this is full and seemeth protruded, there ariseth a double flame of a circular figure and Emerald green colour, which is discernable in any darke place in the day; but when it falleth and seemeth contracted, the light disappeareth, and the colour of the part only remaineth. Now this light, as it appeareth and disappeareth in their life, so doth it goe quite out at their death. As we have observed in some, which preserved in fresh grasse have lived and shined eighteen dayes, but as they declined their light

grew languid, and at last went out with their lives. Thus also the Torpedo which alive hath a power to stupifie at a distance, hath none upon contaction being dead, as Galen and Rondoletius particularly experimented. And this hath also disappointed the mischiefe of those intentions, which study the advancement of poysons, and fancie destructive compositions from Aspes or Vipers teeth, from Scorpions or Hornet stings; for these omit their efficacy in the death of the individuall, and act but dependantly on their formes. And thus far also those Philosophers concur with us which held the Sun and Stars were living creatures, for they conceived their lustre depended on their lives; but if they ever dyed their light must perish also.

True it is, and we have observed it, that a Glow-worme will afford a faint light, almost a dayes space when many will conceive it dead, but this is a mistake in the compute of death, and terme of disanimation; for indeed, it is not then dead, but if it be distended will slowly contract it selfe againe, which when it cannot doe it ceaseth to shine any more. And to speak strictly it is no easie matter to determine the point of death in insects and creatures who have not their vitalities radically confined unto one part; for these are not dead when they cease to move or afford the visible evidencies of life; as may be manifestly observed in flyes, who when they appear even desperate and quite forsaken of their formes, by vertue of the sun or warme ashes will be revoked unto life, and performe its functions againe.

13. The wisdom of the Pismire is magnified by all, and in the Panegyricks of their providence we alwayes meet with this, that to prevent the growth of corne which they store up they bite off the end thereof: And some have conceived that from hence they have their name in Hebrew: From whence ariseth a conceit that corne will not grow if the extreams be cut or broken. What other provision they make for this intention we know not, but herein we finde no security to prevent its germination, as having made tryall in graines whose ends cut off have notwithstanding suddenly sprouted, and according to the law of their kindes, that is the roots of barley and oates at contrary ends, of wheat and rye at the same. And therefore some have delivered that after rainy weather they dry these graines in the Sun, which if effectuall, we must conceive to be made in a high degree and above the progression of Malt, for that Malt will grow this yeare hath informed us, and that unto a perfect ear.

THE

THE FOVRTH BOOK.

Of many popular and received Tenents concerning Man, which examined, prove either false or dubious.

CHAP. I.

Of the erectnesse of Man.

THat onely Man hath an erect figure, and that for to behold and looke up toward heaven, according to that of the Poet——

Pronaque cum spectant animalia cætera terram
Os homini sublime dedit, cælumque tueri
Iussit, & erectos ad sydera tollere vultus,

is a double assertion, whose first part may be true, if we take erectnesse strictly, and so as Galen hath defined it; for they onely, saith he, have an erect figure, whose spine and thigh bone are carried in right lines, and so indeed of any we yet know, Man only is erect; for the thighes of other animals doe stand at angles with their spine, and have rectangular positions in birds, and perfect Quadrupedes; nor doth the Frog, though stretched out, or swimming, attaine the rectitude of man, or carry its thigh without all angularity: and thus is it also true that man onely sitteth, if we define sitting to be a firmation of the body upon the Ischias; wherein if the position be just and naturall the thigh bone lyeth at right angles to the spine, and the leg bone or tibia to the thigh; for others when they seeme to sit, as Dogs, Cats, or Lions, doe make unto their spine acute angles with their thigh, and acute to the thigh with their shanke: Thus is it likewise true, what Aristotle alledgeth in that Probleme; why man alone is ἐξοπισθωκτικὸς or suffereth pollutions in the night; that is, because man onely lyeth upon his back, if we define not the same by every supine position, but when the spine is in rectitude with the thigh, and both with the armes lye parallell to the Horizon, that a line through their navel will passe through the Zenith and centre of the earth, and so cannot other

animals lye upon their backs; for though the ſpine lye parallell with the Horizon, yet will their legs incline, and lye at angles unto it; And upon theſe three divers poſitions in man wherein the ſpine can only be at right lines with the thigh, ariſe thoſe remarkeable poſtures, prone, ſupine, and erect, which are but differenced in ſight, or inaugular poſtures upon the back, the belly and the feet.

But if erectneſſe be popularly taken, and as it is largely oppoſed unto proneneſſe, or the poſture of animals looking downewards, carrying their venters or oppoſite part to the ſpine directly towards the earth, it muſt not be ſtrictly taken; for though in Serpents and Lizards we may truly allow a proneneſſe, yet Galen acknowledgeth that perfect Quadrupedes, as Horſes, Oxen, and Camels, are but partly prone, and have ſome part of erectneſſe; and birds or flying animals, are ſo farre from this kinde of proneneſſe, that they are almoſt erect, advancing the head and breaſt in their progreſſion, and onely prone in the act of their volitation; and if that be true which is delivered of the Penguin or *Anſer Magellanicus*, and often deſcribed in Maps about thoſe Straits, that they goe erect like men, and with their breaſt and belly do make one line perpendicular unto the axis of the earth; it will make up the exact erectneſſe of man; nor will that inſect come very ſhort which we have often beheld, that is, one kinde of Locuſt which ſtands not prone, or a little inclining upward, but in a large erectneſſe, elevating alwayes the two fore legs, and ſuſteining it ſelfe in the middle of the other foure; by Zoographers called *mantis*, and by the Common people of Province, *Priga Dio*, that is, the Prophet and praying Locuſt, as being generally found in the poſture of ſupplication, or ſuch as reſembleth ours, when we lift up our hands to heaven.

As for the end of this erection, to looke up toward heaven, though confirmed by ſeverall teſtimonies, and the Greek Etymology of man, it is not ſo readily to be admitted; and as a popular and vaine conceit was anciently rejected by Galen; who in his third, *De uſu partium*, determines, that man is erect becauſe he was made with hands, and was therewith to exerciſe all Arts which in any other figure he could not have performed, as he excellently declareth in that place where he alſo proves that man could have beene made neither Quadruped, nor Centaur.

The ground and occaſion of this conceit was a literall apprehenſion of a figurative expreſſion in Plato, as Galen plainely delivers, the effect of whoſe words is this: To opinion that man is erect to looke up and behold the heavens, is a conceit onely fit for thoſe that never ſaw the fiſh Uranoſcopus, that is, the Beholder of heaven; which hath its eyes ſo placed, that it lookes up directly to heaven, which man doth not, except he recline, or bend his head backward; and thus to looke up to heaven agreeth not onely unto men, but Aſſes; to omit birds with long necks,

necks, which looke not onely upwards, but round about at pleasure; and therefore men of this opinion understood not Plato when he said that man doth *Sursum aspicere*, for thereby was not meant to gape or looke upward with the eye, but to have his thoughts sublime, and not onely to behold, but speculate their nature with the eye of the understanding.

Now although Galen in this place makes instance but in one, yet are there other fishes, whose eyes regard the heavens, as Plane, and cartilagineous fishes as pectinals, or such as have the Apophyses of their spine made laterally like a combe, for when they apply themselves to sleepe or rest upon the white side, their eyes on the other side looke upward toward heaven: for birds, they generally carry their heads erectly like man, and some have advantage in that they move not their upper eyelid; and many that have long necks, and bear their heads somewhat backward, behold farre more of the heavens, and seeme to look above the æquinoxiall circle; and so also in many Quadrupeds, although their progression be partly prone, yet is the sight of their eye direct, not respecting the earth but heaven, and makes an higher arch of altitude then our owne. The position of a Frogge with his head above water exceedeth these; for therein hee seemes to behold a large part of the heavens, and the acies of his eye to ascend as high as the Tropick; but he that hath beheld the posture of a Bitour, will not deny that it beholds almost the very Zenith.

Chap. II.

Of the heart.

That the heart of man is seated in the left side, is an asseveration which strictly taken, is refutable by inspection; whereby it appeares the base and centre thereof is in the midst of the chest; true it is that the Mucro or point thereof inclineth unto the left, for by this position it giveth way unto the ascension of the midriffe, and by reason of the hollow veine could not commodiously deflect unto the right; from which diversion, nevertheless wee cannot so properly say tis placed in the left, as that it consisteth in the middle, that is, where its centre resteth; for so doe we usually say a Gnomon or needle is in the middle of a Diall, although the extreams may respect the North or South and approach the circumference thereof.

The ground of this mistake is a generall observation from the pulse or motion of the heart, which is more sensible on this side; but the reason hereof is not to be drawne from the situation of the heart, but the site of the left ventricle wherein the vitall spirits are laboured, and also the great Artery that conveyeth them out, both which are situated on the

the left; and upon this reason epithems or cordial applications are justly applyed unto the left breast, and the wounds under the fift rib may bee more suddenly destructive if made on the siniſter side; and the speare of the souldier that pierced our Saviour, is not improperly described when Painters direct it a little towards the left.

The other ground is more particular and upon inspection; for in dead bodies especially lying upon the spine, the heart doth seem to incline unto the left, which happeneth not from its proper site, but besides its siniſtrous gravity is drawne that way by the great arterie, which then subsideth & haleth the heart unto it, And therefore strictly taken, the heart is seated in the middle of the chest; but after a careleſſe and inconsiderate aspection, or according to the readiest sense of pulsation, wee shall not quarrell if any affirme it is seated toward the left; and in these considerations must Aristotle be salved, when hee affirmeth the heart of man is placed in the left side, and thus in a popular acception may wee receive the periphrasis of Persius when hee taketh the part under the left pappe for the heart; and if rightly apprehended, it concerneth not this controversie, when it is said in Eccleſiastes, The heart of a wiseman is in the right side, but that of a fool in the left.

—Lævâ in parte mamillæ.

That assertion also that man proportionally hath the largest brain, I did I confesse somewhat doubt, and conceived it might have failed in birds, especially such as having little bodies, have yet large cranies, and seeme to containe much brain, as Snipes, Woodcoks, &c. but upon triall I finde it very true. The braines of a man Archangelus and Bauhinus, observe to weigh four pound, and sometime five and an half, if therefore a man weigh one hundred and forty pounds, and his braine but five, his waight is 27. times as much as his braine, deducting the waight of that five pound which is allowed for it; now in a Snype which waighed foure ounces two dragmes, I find the braines to waigh but half dragme, so that the weight of the body (allowing for the brain) exceeded the waight of the brain, sixtie seven times and an half.

Chap. III.

Of Pleurisies.

That Pleurisies are onely on the left side, is a popular Tenent, not onely absurde but dangerous. From the misapprehension hereof, men omitting the opportunity of those remedies, which otherwise they would not neglect; chiefly occasioned by the ignorance of Anatomie, & the extent of the part affected, which in an exquisite Pleurisie is determined to be the skin or membrane which inveſteth the ribbes, for so it is defined, *Inflammatio membranæ costas succingentis*; An Inflammation either simple consisting onely of an hot and sanguineous afflux-

ion,

ion, or els Oedematous, Schirrous, Erisipelatous according to the predominancy of melancholy, flegme, or choler; The vessells whereby the morbificall matter is derived unto this membrane, are either the ascending branches of the hollow veine, which disperse themselves into the foure upper ribbs, or else the Azygos, or *vena sine pari*, whose furcles are disposed unto the other lower; The membrane thus inflamed, is properly called *Pleura*, from whence the disease hath its name, and this investeth not onely one side, but overspreadeth the cavitie of the chest, and affordeth a common coat unto the parts contained therein.

Now therefore the *Pleura* being common unto both sides, it is not reasonable to confine the inflammation unto one, nor strictly to determine it is alwayes in the side, but sometimes before and behinde, that is, inclining to the spine or breastbone, for thither this coat extendeth; and therefore with equall propriety we may affirme, that ulcers of the lungs, or Apostems of the braine doe happen onely in the left side, or that Ruptures are confineable unto one side, whereas the peritoneum or rimme of the belly may be broke, or its perforations relaxed in either.

Chap. IV.

Of the Ring finger.

AN opinion there is, which magnifies the condition of the fourth finger of the left hand, presuming therein a cordiall relation, that a particular vessell, nerve, veine, or arterie is conferred thereto from the heart, and therefore that especially hath the honour to beare our rings; which was not only the Christian practise in Nuptiall contracts, but observed by the heathens, as Alexander *ab Alexandro*, Gellius, Macrobius, and Pierius haue delivered, as lately Levinus Lemnius hath confirmed, who affirmes this peculiar vessell to bee an Arterie, and not a nerve, as antiquitie conceived it; adding moreover that rings hereon peculiarly affect the heart; that in Lipothymies or swoundings he used the frication of this finger with saffron and gold; that the ancient Physitians mixed up their Medicines herewith; that this is seldome or last of all affected with the Gout, and when that becommeth nodous, men continue not long after: notwithstanding all which we remaine unsatisfied, nor can we thinke the reasons alledged sufficiently establish the priviledge of this finger.

For first, concerning the practice of antiquity the custome was not generall to weare their rings either on this hand or finger; for it is said, and that emphatically in Jeremiah, *Si fuerit Ieconias filius Ioachim regis Iudæ annulus in manu dextrâ meâ, inde evellam eum*: Though Coniah the son of Joachim King of Judah were the signet on my right hand,

hand; yet would I pluck thee thence: So is it observed by Pliny that in the portraits of their Gods the rings were worne on the finger next the thumb, that the Romans wore them also upon their little finger, as Nero is described in Petronius: some wore them on the middle finger as the ancient Gaules and Britans, and some upon the forefinger, as is deduceable from Julius Pollux, who names that ring Corionos.

Againe, that the practice of the Ancients had any such respect of cordiality or reference unto the heart will much be doubted if we consider their rings were made of Iron; such was that of Prometheus who is conceived the first that brought them in use; so, as Pliny affirmeth, for many yeates the Senators of Rome did not weare any rings of Gold: but the slaves wore generally Iron rings untill their manumission or preferment to some dignity; That the Lacedemonians continued their Iron rings unto his dayes, Pliny also delivereth; and surely they used few of Gold, for beside that Lycurgus prohibited that mettall, we read in Athenæus that having a desire to guild the face of Apollo, they enquired of the oracle where they might purchase so much gold, and were directed unto Cræsus King of Lydia.

Moreover whether the Ancients had any such intention, the grounds which they conceived in veyne, nerve, or artery, are not to be justified, nor will inspection confirm a peculiar vessell in this finger: for as Anatomy informeth, the Basilica veyne dividing into two branches below the cubit, the outward sendeth two surcles unto the thumb, two unto the forefinger, and one unto the middlefinger in the inward side; the other branch of the Basilica sendeth one surcle unto the outside of the middlefinger, two unto the Ring, and as many unto the littlefingers; so that they all proceed from the Basilica, and are in equall numbers derived unto every one: In the same manner are the branches of the axillary artery distributed into the hand, for below the cubit it divideth into two parts, the one running along the Radius, and passing by the wrest or place of the pulse, is at the fingers subdivided into three branches, whereof the first conveyeth two surcles unto the thumb, the second as many to the forefinger, and the third one unto the middlefinger; the other or lower division of the artery descendeth by the ulna, and furnisheth the other fingers, that is the middle with one surcle, and the ring and little fingers with two; as for the nerves they are disposed much after the same maner, and have their originall from the brain, and not the heart, as many of the Ancients conceived; which is so farre from affording nerves unto other parts, that it receiveth very few it self from the sixt conjugation, or paire of nerves in the brain.

Lastly, these propagations being communicated unto both hands, we have no greater reason to weare our rings on the left, then on the right, nor are there cordiall considerations in the one, more then the other; and therefore when Forestus for the stanching of blood makes

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use of Topicall applications unto the fourth finger, he confines not that practice unto the left, but varieth the side according to the nostrill bleeding: and so in fevers, where the heart primarily suffereth, we apply medicines unto the wrests of either arme; and so we touch the pulse of both, and judge of the affections of the heart by the one as well as the other: and although in indispositions of liver or spleene considerations are made in Phlebotomy respectively to their situation; yet when the heart is affected men have thought it as effectuall to bleed on the right as the left; and although also it may be thought, a nearer respect is to be had of the left, because the great artery proceeds from the left ventricle, and so is nearer that arme, it admits not that consideration; for under the channell bones the artery divideth into two great branches, from which trunke or point of division the distance unto either hand is equall, and the consideration answerable.

And therefore Macrobius discussing the point, hath alleadged another reason, affirming that the gestation of rings upon this hand and finger, might rather be used for their conveniency and preservation then any cordiall relation; for at first (saith he) it was both free and usuall to weare rings on either hand, but after that luxury encreased, when pretious gems and rich insculptures were added, the custome of wearing them on the right hand was translated unto the left, for that hand being lesse employed, thereby they were best preserved; and for the same reason they placed them on this finger, for the thumb was too active a finger, and is commonly imployed with either of the rest: the Index or forefinger was too naked whereto to commit their pretiosities and hath the tuition of the thumbe scarce unto the second joynt: the middle and little finger they rejected as extreams, and too big or too little for their rings, and of all chose out the fourth as being least used of any, as being guarded on either side, and having in most this peculiar condition that it cannot be extended alone and by it selfe, but will bee accompained by some finger on either side: and to this opinion assenteth Alexander *ab Alexandro, Annulum nuptialem prior ætas in sinistrâ ferebat, crediderim ne attereretur.*

Now that which begat or promoted the common opinion, was the common conceit that the heart was seated on the left side, but how far this is verified, we have before declared. The Ægyptian practice hath much advanced the same, who unto this finger derived a nerve from the heart, and therefore the Priest anointed the same with pretious oyls before the altar; but how weake Anatomists they were, which were so good Embalmers we have already shewed; and though this reason tooke most place, yet had they another which more commended that practice, and that was the number whereof this finger was an Hieroglyphick: for by holding downe the fourth finger of the left hand, while the rest were extended, they signified the perfect and magnified

number of six; for as Pierius hath graphically declared, Antiquity expressed numbers by the fingers of either hand; on the left they accounted their digits and articulate numbers unto an hundred, on the right hand hundreds & thousands; the depressing this finger which in the left hand implied but six, in the right indigitated six hundred: In this way of numeration may we construe that of Juvenal concerning Nestor.

——— *mortem*
Distulit, atq; suos jam dextrâ computat annos.

And how ever it were intended, and in this sense it will be very elegant what is delivered of Wisdome, Prov. 3. Length of dayes is in her right hand, and in her left hand riches and honour.

As for the observation of Lemnius an eminent Physitian, concerning the gowt, how ever it happened in his country, wee may observe it otherwise in ours; that is, that chiragricall persons doe suffer in this finger as well as in the rest, and sometimes first of all, and sometimes no where else; and for the mixing up medicines herewith, it is rather an argument of opinion then any considerable effect, and we as highly conceive of the practice in Diapalma, that is in the making of that plaister, to stirre it with the stick of a Palme.

Chap. V.

Of the right and left Hand.

IT is also suspicious, and not with that certainty to be received, what is generally believed concerning the right and left hand, that men naturally make use of the right, and that the use of the other is a digression or aberration from that way which nature generally intendeth; and truly we do not deny that almost all Nations have used this hand, and ascribed a preheminence thereto: hereof a remarkable passage there is in the 48. of Genesis, And Joseph tooke them both, Ephraim in his right hand towards Israels left hand, and Manasses in his left hand towards Israels right hand, and Israel stretched out his right hand and laid it upon Ephraims head, who was the younger, and his left hand upon Manasses head guiding his hands wittingly, for Manasses was the first borne; and when Joseph saw that his father laid his right hand upon the head of Ephraim, it displeased him, and he held up his fathers hand to remove it from Ephraims head unto Manasses head, and Joseph said not so my father, for this is thy first borne, put thy right hand upon his head: And the like appeareth from the ordinance of Moses in the consecration of their Priests, Then shalt thou kill the Ram, and take of his bloud, and put it upon the tip of the right eare of Aaron, and upon the tip of the right eare of his sonnes, and upon the thumb of the right hand, and upon the great toe of the right foot, and

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ſprinkle the bloud on the Altar round about: That the Perſians were wont herewith to plight their faith, is teſtified by Diodorus: That the Greeks and Romans made uſe hereof, beſide the teſtimony of divers Authors, is evident from their cuſtome of diſcumbency at their meales, which was upon their left ſide, for ſo their right hand was free, and ready for all ſervice; nor was this onely in uſe with divers Nations of men, but was the cuſtome of whole Nations of women, as is deduceable from the Amazones in the amputation of their right breaſt, whereby they had the freer uſe of their bow: all which doe declare a naturall preheminency and preferment of the one unto motion before the other, wherein notwithſtanding in ſubmiſſion to future information, we are unſatisfied unto great dubitation.

For firſt, if there were a determinate prepotency in the right, and ſuch as ariſeth from a conſtant roote in nature, wee might expect the ſame in other animals, whoſe parts are alſo differenced by dextrality, wherein notwithſtanding we cannot diſcover a diſtinct and complying account, for we finde not that Horſes, Buls, or Mules, are generally ſtronger on this ſide; and as for animals whoſe forelegs more ſenſibly ſupply the uſe of armes, they hold if not an equality in both, a prevalency oft times in the other, as Squirrels, Apes, and Monkeys, and the ſame is alſo diſcernible in Parrets, and men obſerve that the eye of a Tumbler is biggeſt not conſtantly in one, but in the bearing ſide.

That there is alſo in men a naturall prepotency in the right we cannot with conſtancy affirme, if we make obſervation in children, who permitted the freedome of both, do oft times confine unto the left, and are not without great difficulty reſtrained from it: and therefore this prevalency is either uncertainly placed in the laterallity, or cuſtome determines its indifferency: which is the reſolution of Ariſtotle in that Probleme, which enquires why the right ſide being better then the left, is equall in the ſenſes? becauſe, ſaith he, the right and left do differ by uſe and cuſtome which have no place in the ſenſes: and the reaſon is allowable; for right and left as parts inſervient unto the motive faculty are differenced by degrees from uſe and aſſuefaction, according whereto the one grows ſtronger, and oft times bigger then the other; but in the ſenſes it is otherwiſe; for they acquire not their perfection by uſe or cuſtome, but at the firſt we equally heare and ſee with one eye, as well as with another: and therefore, were this indifferency permitted, or did not inſtitution, but Nature determine dextrality, there would be many more Scevolaes then are delivered in ſtory; nor ſhould we wonder at ſeven thouſand in one Army, as wee reade concerning the Benjamites. True it is, that although there be an indifferency in either, or a prevalency indifferent in one, yet is it moſt reaſonable for uniformity, and ſundry reſpective uſes, that men ſhould apply themſelves to the conſtant uſe of one, for there will otherwiſe ariſe anoma-

lous disturbances in manuall actions, not onely in Civill and artificiall, but also in Military affaires, and the severall actions of warre.

Secondly, the grounds and reasons alleadged for the right are not satisfactory, and afford no rest in their decision: Scaliger finding a defect in the reason of Aristotle, introduceth one of no lesse deficiency himselfe, *Ratio materialis* (saith he) *sanguinis crassitudo simul & multitudo*, that is, the reason of the vigour of this side is the crassitude and plenty of bloud; but this is no way sufficient, for the crassitude or thickness of bloud, affordeth no reason why one arme should be enabled before the other, and the plenty thereof, why both not enabled equally: Fallopius is of another conceit, deducing the reason from the Azygos or *vena sine pari*, a large and considerable veine arising out of the cava or hallow veine, before it enters the right ventricle of the heart, and placed onely in the right side; but neither is this perswasory, for the Azygos communicates no branches unto the armes or legs on either side, but disperseth into the ribs on both, and in its descent doth furnish the left Emulgent with one veyne, and the first veyne of the loynes on the right side with another; which manner of derivation doth not conferre a peculiar addition unto either. *Cælius Rodiginus* undertaking to give a reason of Ambidexters and left handed men, delivereth a third opinion: Men, saith he, are Ambidexters, and use both hands alike, when the heat of the heart doth plentifully disperse into the left side, and that of the Liver into the right, and the spleene be also much dilated; but men are left handed when ever it happeneth that the heart and Liver are seated on the left side, or when the Liver is on the right side, yet so obducted and covered with thick skins, that it cannot diffuse its virtue into the right: which reasons are no way satisfactory; for herein the spleene is injustly introduced to invigorate the sinister side, which being dilated it would rather infirme and debilitate; as for any tunicles or skins which should hinder the Liver from enabling the deutrall parts, we must not conceive it diffuseth its virtue by meere irradiation, but by its veines and proper vessels, which common skins and teguments cannot impede, and as for the seate of the heart and Liver in one side whereby men become left handed, it happeneth too rarely to countenance an effect so common; for the seat of the Liver on the left side is very monstrous, and scarce at all to be met with in the observations of Physitians. Others not considering ambidextrous and left handed men, doe totally submit unto the efficacy of the Liver, which though it be seated on the right side, yet by the subclavian division doth equidistantly communicate its activity unto either arme, nor will it salve the doubts of observation, for many are right handed whose Livers are weakely constituted, and many use the left, in whom that part is strongest; and we observe in Apes and other animals, whose Liver is in the right, no regular prevalence therein, and

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therefore the Braine, especially the spinall marrow, which is but the braine prolonged, hath a fairer plea hereto, for these are the principles of motion wherein dextrality consists, and are bipartited within and without the Crany; by which division transmitting nerves respectively unto either side, according to the indifferency or originall and native prepotency, there ariseth an equality in both, or prevalency in either side; and so may it be made out, what many may wonder at, why some most actively use the contrary arme and leg, for the vigour of the one dependeth upon the upper part of the spine, but the other upon the lower.

And therefore many things are Philosophically delivered concerning right and left, which admit of some suspension; that a woman upon a masculine conception advanceth her right leg, will not be found to answer strict observation; That males are conceived in the right side of the wombe, females in the left, though generally delivered, and supported by ancient testimony, will make no infallible account; it happening oft times that males and females doe lye upon both sides, and Hermaphrodites for ought we know on either: It is also suspicious what is delivered concerning the right and left testicle, that males are begotten from the one, and females from the other; for though the left seminall veine proceedeth from the Emulgent, and is therefore conceived to carry downe a serous and feminine matter, yet the seminall Arteryes which send forth the active materials, are both derived from the great Artery: Beside this originall of the left veine was thus contrived, to avoid the pulsation of the great Arterie over which it must have passed to attaine unto the Testicle; Nor can we easily inferre such different effects from the divers situation of parts which have one end and office; for in the kidneys which have one office, the right is seated lower then the left, whereby it lyeth free, and giveth way unto the Liver, and therefore also that way which is delivered for masculine generation, to make a straite ligature about the left Testicle, thereby to intercept the evacuation of that part, deserveth consideration; for one sufficeth unto generation, as hath beene observed in semicastration, and oft times in carnous ruptures: beside the seminall ejaculation proceeds not immediately from the Testicle, but from the spermatick glandules; and therefore Aristotle affirmes, (and reason cannot deny) that although there be nothing diffused from the Testicles, an Horse or Bull may generate after castration, that is, from the stock and remainder of seminall matter, already prepared and stored up in the Prostates or glandules of generation.

Thirdly, although wee should concede a right and left in Nature, yet in this common and received accout we may aberre from the proper acception, mistaking one side for another, calling that in man and other animals the right which is the left, and that the left which is the

right,

right, and that in some things right and left, which is not properly either.

For first the right and left, are nor defined by Philosophers according to common acception, that is, respectively from one man unto another, or any constant site in each; as though that should bee the right in one, which upon confront or facing stands a thwart or diagonially unto the other, but were distinguished according to the activitie and predominant locomotion upon either side: Thus Aristole in his excellent Tract *de Incessu animalium*, ascribeth six positions unto animals, answering the three dimensions; which he determineth not by site or position unto the heavens, but by their faculties and functions, and these are *Imum summum, Ante Retro, Dextra & Sinistra*: that is, the superiour part where the aliment is received, that the lower extreme where it is last expelled; so hee termeth a man a plant inverted; for hee supposeth the root of a tree the head or upper part thereof, whereby it receiveth its aliment, although therewith it respects the Center of the earth, but with the other the Zenith; and this position is answerable unto longitude: Those parts are anterior and measure profunditie where the senses, especially the eyes are placed, and those posterior which are opposite hereunto; The dextrous and sinistrous parts of the body make up the Latitude, and are not certain and inalterable like the other; for that saith hee, is the right side from whence the motion of the body beginneth, that is, the active or moving side, but that the sinister which is the weaker or more quiescent part: of the same determination were the Platonicks and Pythagorians before him, who conceiving the heavens an animated body, named the East the right or dextrous part, from whence began their motion: and thus the Greeks from wence the Latines have borrowed their appellation, have named this hand δέξια denominating it not from the site, but office from δέχομαι *capio*, that is, the hand w^ch^ receiveth, or is usually implied in that action.

Now upon these grounds we are most commonly mistaken, defining that by situation which they determined by motion, and give the terme of right hand to that which doth not properly admit it: For first, many in their infancy are sinistrously disposed, and divers continue all their life Λευσεῖς that is left handed, and have but weak and imperfect use of the right; now unto these that hand is properly the right, and not the other estemed so by situation: Thus may Aristotle bee made out, when hee affirmeth the right claw of Crabbes and Lobsters is biggest, if we take the right for the most vigorous side, and not regard the relative situation; for the one is generally bigger then the other, yet not alwayes upon the same side: so may it bee verified what is delivered by Scaliger in his Comment, that Palsies do oftnest happen upon the left side if understood in this sense; the most vigorous part protecting it selfe, and protruding the matter upon the weaker and

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leſſe reſiſtive ſide: and thus the Law of Common-Weales, that cut off the right hand of Malefactors, if Philoſophically executed, is impartiall, otherwiſe the amputation not equally puniſheth all.

Some are Αμφιδέξιοι, that is, ambidexterous or right-handed on both ſides, which happeneth only unto ſtrong and Athleticall bodies, whoſe heat and ſpirits are able to afford an ability unto both; and therefore Hippocrates ſaith, that women are not ambidexterous, that is, not ſo often as men, for ſome are found, which indifferently make uſe of both; and ſo may Ariſtotle ſay, that only man is Ambidexter; of this conſtitution was Aſteropæus in Homer, and Parthenopeus the Theban Captaine in Statius; and of the ſame doe ſome conceive our Father Adam to have been, as being perfectly framed, and in a conſtitution admitting leaſt defect: Now in theſe men the right hand is on both ſides, and that which is the oppoſite to the one, is not the left unto the other.

Againe, ſome are Αμφαριστεροί as Galen hath expreſſed: that is, Ambilevous or left handed on both ſides; ſuch as with agility and vigour have not the uſe of either, who are not gymnaſtically compoſed; nor actively uſe thoſe parts; now in theſe there is no right hand: of this conſtitution are many women, and ſome men; who though they accuſtome themſelves unto either hand, do dexterouſly make uſe of neither; and therefore although the Politicall adviſe of Ariſtotle bee very good, that men ſhould accuſtom themſelves to the command of either hand, yet cannot the execution or performance thereof be generall, for though there bee many found that can uſe both, yet will there divers remaine that can ſtrenuouſly make uſe of neither.

Laſtly, theſe lateralities in man are not onely fallible, if relatively determined unto each others, but made in reference unto the heavens, and quarters of the Globe: for thoſe parts are not capable of theſe conditions in themſelves, nor with any certainty reſpectively derived from us, nor we from them againe. And firſt in regard of their proper nature, the heavens admit not theſe ſiniſter and dexter reſpects, there being in them no diverſitie or difference, but a ſimplicity of parts, and equiformity in motion continually ſucceeding each other; ſo that from what point ſoever we compute, the account will be common unto the whole circularity, and therefore though it be plauſible, it is not fundamentall what is delivered by Solinus, That man was therefore a Microcoſme or little world, becauſe the dimenſions of his poſitions were anſwerable unto the greater; for as in the heavens the diſtance of the North and Southerne pole, which are eſteemed the ſuperiour and inferiour poynts, is equall unto the ſpace between the Eaſt and Weſt, accounted the dextrous and ſiniſtrous parts thereof; ſo is it alſo in man: for the extent of his fathome, or diſtance betwixt the extremity of the fingers of either hand upon expanſion, is equall unto the ſpace between the ſoale of the foot and the crowne; but this doth but petionarily inferre

terre a dextrality in the heavens, and we may as reasonably conclude a right and left laterallity in the Ark or navall edifice of Noah: for the length thereof was thirty cubits, the bredth fifty, and the heigth or profundity thirty, which well agreeth unto the proportion of man, whose length that is a perpendicular from the vertix unto the soal of the foot is sextuple unto his breadth, or a right line drawne from the ribs of one side to another; and decuple unto his profundity, that is a direct line between the breast bone and the spine.

Againe, they receive not these conditions with any assurance or stability from our selves; for the relative foundations and points of denomination, are not fixed and certaine, but variously designed according to imagination. The Philosopher accounts that East from whence the heavens begin their motion. The Astronomer regarding the South and Meridian Sun, calls that the dextrous part of heaven which respecteth his right hand, and that is the West. Poets respecting the West assign the name of right unto the North which regardeth their right hand, and so must that of Ovid be explaned, *utq; dua dextrâ zonæ totidemq; siniſtrâ:* But Augurs or Southsayers turning their face to the East, did make the right in the South, which was also observed by the Hebrews and Chaldæans. Now if we name the quarters of heaven respectively unto our sides, it will be no certaine or invariable denomination; for if we call that the right side of heaven which is seated Easterly unto us, when we regard the meridian Sun, the inhabitants beyond the equator and Southerne Tropick when they face us regarding the meridian will contrarily define it; for unto them, the opposite part of heaven will respect the left, and the Sun arise to their right.

And thus have we at large declared that although the right be most commonly used, yet hath it no regular or certaine root in nature: Since it is most confirmable from other animalls: Since in children it seemes either indifferent or more favourable in the other, but more reasonable for uniformity in action that men accustome unto one: Since the grounds and reasons urged for it doe no way support it: Since if there be a right and stronger side in nature, yet may we mistake in its denomination, calling that the right which is the left, and the left which is the right: Since some have one right, some both, some neither: and laſtly, Since these affections in man are not only fallible in relation unto one another, but made also in reference unto the heavens, they being not capable of these conditions in themselves, nor with any certainty from us, nor we from them againe.

And therefore what admission we owe unto many conceptions concerning right and left requireth circumspection; that is, how far wee ought to relye upon the remedy of Kiramides, that is the left eye of an Hedgehog fryed in oyle to procure sleep, and the right foot of a frog in a Deers skin for the gowt; or that to dream of the losse of right

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or left tooth presageth the death of male or female kindred, according to the doctrine of Metrodorus; what verity there is in that numerall conceit in the laterall division of man by even and odde, ascribing the odde unto the right side, and even unto the left; and so by parity or imparity of letters in mens names determine misfortunes on either side of their bodyes; by which account in Greek numeration Hephæstus or Vulcane was lame in the right foot, and Anniball lost his right eye: And lastly, what substance there is in that Auspiciall principle, and fundamentall doctrine of Ariolation that the left hand is ominous, and that good things do passe siniſtrously upon us, becaus the left hand of man respected the right hand of the Gods, which handed their favours unto us.

Chap. VI.

Of Swimming.

THat men swim naturally, if not disturbed by feare; that men being drowned and sunke, doe float the ninth day when their gall breaketh; that women drowned swim prone but men supine, or upon their backs, are popular affirmations, whereto we cannot assent: And first, that man should swim naturally, because we observe it is no lesson unto others we cannot well conclude; for other animalls swim in the same manner as they goe, and need no other way of motion, for natation in the water, then for progression upon the land; and this is true whether they move *per latera*, that is two legs of one side together, which is Tollutation or ambling, or *per diametrum*, which is most generall, lifting one foot before, and the crosse foot behinde, which is succussation or trotting, or whether *per frontem* or *quadratum*, as Scaliger tearmes it, upon a square base of the legs of both sides moving together as frogs, and salient animalls, which is properly called leaping; for by these motions they are able to support and impell themselves in the water, without addition or alteration in the stroake of their legs, or position of their bodies.

But with man it is performed otherwise; for in regard of site he alters his naturall posture and swimmeth prone, whereas hee walketh erect; againe in progression the armes move parallell to the legs and the armes and legs unto each other; but in natation they intersect and make all sorts of Angles: and lastly, in progressive motion, the armes and legs doe move successively, but in natation both together; all which aptly to performe, and so as to support and advance the body, is a point of art, and such as some in their young and docile yeares could never attaine. But although it be acquired by art, yet is there somewhat more of nature in it then we observe in other habits, nor will it strictly fall

under that definition, for once obtained it is not to be removed; nor is there any who from diſuſe did ever yet forget it.

Secondly, that perſons drowned ariſe and float the ninth day when their gall breaketh, is a queſtionable determination both in the time and cauſe, for the time of floating it is uncertain according to the time of putrefaction, which will retard or accelerate according to the ſubject and ſeaſon of the year; for as we have obſerved cats and mice will ariſe unequally and at different times, though drowned at the ſame; ſuch as are fatted doe commonly float ſooneſt, for their bodies ſooneſt ferment, and that ſubſtance approacheth neareſt unto ayre: and this is one of Ariſtotles reaſons why dead Eeles will not float, becauſe ſaith he, they have but ſlender bellies, and little fat.

As for the cauſe it is not ſo reaſonably imputed unto the breaking of the gall as the putrefaction of the body, whereby the unnaturall heat prevailing the putrifying parts do ſuffer a turgeſcence and inflation, and becomming airy and ſpumous affect to approach the ayre, and aſcend unto the ſurface of the matter: and this is alſo evidenced in egges wherof the ſound ones ſink, & ſuch as are addled ſwim, as do alſo thoſe which are tearmed hypenemia or wind-egges, and this is alſo a way to ſeparate ſeeds, whereof ſuch as are corrupted and ſterill ſwim; and this agreeth not only unto the ſeed of plants lockt up and capſulated in their husks, but alſo unto the ſperme and ſeminall humor of man, for ſuch a paſſage hath Ariſtotle upon the Inquiſition and teſt of its fertility.

That the breaking of the gall is not the cauſe hereof experience hath informed us, for opening the abdomen, and taking out the gall in cats and mice, they did notwithſtanding ariſe: and becauſe wee had read in Rhodiginus of a Tyrant, who to prevent the emergencie of murdered bodies did uſe to cut off their lungs, and found mens minds poſſeſſed with this reaſon; we committed ſome unto the water without lungs, which notwithſtanding floated with the others: and to compleat the experiment, although we tooke out the guts and bladder, and alſo perforated the Cranium, yet would they ariſe, though in a longer time: from theſe obſervations in other animalls, it may not be unreaſonable to conclude the ſame in man, who is too noble a ſubject on whom to make them expreſſely, and the caſuall opportunity too rare almoſt to make any. Now if any ſhall ground this effect from gall or choler, becauſe it is the higheſt humor and will be above the reſt; or being the fiery humor will readieſt ſurmount the water, wee muſt confeſſe in the common putreſcence it may promote elevation, which the breaking of the bladder of gall ſo ſmall a part in man, cannot conſiderably advantage.

Laſtly, that women drowned float prone, that is with their bellies downward, but men ſupine or upward is an aſſertion wherein the *boti* or

point

point it selfe is dubious; and were it true the reason alleadged for it, is of no validity. The reason yet currant was first expressed by Pliny, *veluti pudori defunctarum parcente naturâ*, nature modestly ordaining this position to conceale the shame of the dead, which hath been taken up by Solinus, Rhodiginus, and many more: This indeed (as Scaliger tearmeth it) is *ratio civilis non philosophica*, strong enough for morality or Rhetoricks, not for Philosophy or Physicks: for first, in nature the concealment of secret parts is the same in both sexes and the shame of their reveale equall: so Adam upon the taste of the fruit was ashamed of his nakednesse as well as Eve: and so likewise in America and countries unacquainted with habits, where modesty conceales these parts in one sex, it doth it also in the other; and therefore had this been the intention of nature, not only women, but men also had swimmed downwards, the posture in reason being common unto both where the intent is also common.

Againe, while herein we commend the modesty, we condemne the wisdome of nature: for that prone position we make her contrive unto the woman, were best agreeable unto the man in whom the secret parts are very anterior and more discoverable in a supine and upward posture: and therefore Scaliger declining this reason hath recurred unto another from the difference of parts in both sexes, *Quod ventre vasto sunt mulieres plenoq; intestinis, itaq; minus impletur & subsidet, inanior maribus quibus nates preponderant*: If so, then men with great bellies will float downward, and only Callipygæ and women largely composed behinde, upward. But Anatomists observe that to make the larger cavity for the Infant, the hanch bones in women, and consequently the parts appendant are more protuberant then they are in men: They who ascribe the cause unto the breasts of women, take not away the doubt, for they resolve not why children float downward who are included in that sex, though not in the reason alleadged: but hereof we cease to discourse lest we undertake to afford a reason of the * golden tooth, that is to invent or assigne a cause, when we remaine unsatisfied or unassured of the effect.

* Of the cause whereof much dispute was made, and at last proved an imposture.

Chap. VII.

Concerning Weight.

That men weigh heavier dead then alive, if experiment hath not failed us, we cannot reasonably grant; for though the triall hereof cannot so well be made on the body of man, nor will the difference be sensible in the abate of scruples or dragmes, yet can we not confirme the same in lesser animalls from whence the inference is good; and the affirmative of Pliny saith that it is true in all: for exactly weighing

and ſtrangling a chicken in the Scales, upon an immediate ponderation, we could diſcover no ſenſible difference in weight, but ſuffering it to lye eight or ten howres, untill it grew perfectly cold, it weighed moſt ſenſibly lighter; the like we attempted, and verified in mice, and performed their trials in Scales that would turne upon the eighth or tenth part of a graine.

Now whereas ſome alledge that ſpirits are light ſubſtances, and naturally aſcending do elevate and waft the body upward, whereof dead bodies being deſtitute contract a greater gravity; although we concede that ſpirits are light, comparatively unto the body, yet that they are abſolutely ſo, or have no weight at all, wee cannot readily allow; for ſince Philoſophy affirmeth that ſpirits are middle ſubſtances betweene the ſoule and body, they muſt admit of ſome corporiety which ſuppoſeth weight or gravity. Beſide, in carcaſſes warme, and bodies newly diſanimated while tranſpiration remaineth, there doe exhale and breathe out vaporous and fluid parts, which carry away ſome power of gravitation; which though we muſt allow, we do not make anſwerable unto living expiration, and therefore the Chicken or Mice were not ſo light being dead, as they would have beene after ten houres kept alive, for in that ſpace a man abateth many ounces; nor if it had ſlept, for in that ſpace of ſleepe, a man will ſometimes abate forty ounces, nor if it had beene in the middle of ſummer, for then a man weigheth ſome pounds leſſe then in the heighth of winter, according to experience, and the ſtatick aphoriſmes of Sanctorius.

Againe, whereas men affirme they perceave an addition of ponderoſity in dead bodies, comparing them uſually unto blocks and ſtones, whenſoever they lift or carry them, this acceſſionall preponderancy is rather in appearance then reality; for being deſtitute of any motion, they conferre no reliefe unto the Agents or Elevators, which makes us meet with the ſame complaints of gravity in animated and living bodies, where the nerves ſubſide, and the faculty locomotive ſeemes aboliſhed, as may be obſerved in the lifting or ſupporting of perſons inebriated, Apoplecticall, or in Lipothymies and ſwoundings.

Many are alſo of opinion, and ſome learned men maintaine, that men are lighter after meales then before, and that by a ſupply and addition of ſpirits obſcuring the groſſe ponderoſity of the aliment ingeſted; but the contrary hereof we have found in the triall of ſundry perſons in different ſex, and ages; and we conceave men may miſtake if they diſtinguiſh not the ſenſe of levity unto themſelves, and in regard of the ſcale or deciſion of trutination; for after a draught of wine a man may ſeeme lighter in himſelfe from ſudden refection, although he be heavier in the balance, from a corporall and ponderous addition; but a man in the morning is lighter in the ſcale, becauſe in ſleepe ſome pounds have perſpired, and is alſo lighter unto himſelfe, becauſe he is refected.

And

And to speake strictly, a man that holds his breath is weightier while his lungs are full, then upon expiration; for a bladder blowne is weightier then one empty, and if it containe a quart, expressed and emptied it will abate about halfe a graine; and we somewhat mistrust the experiment of a pumice-stone taken up by Montanus, in his Comment upon Avicenna, where declaring how the rarity of parts, and numerosity of pores, occasioneth a lightnesse in bodies, he affirmes that a pumice-stone powdered, is lighter then one entire, which is an experiment beyond our satisfaction; for beside that abatement can hardly be avoyded in the Trituration; if a bladder of good capacity will scarce include a graine of ayre, a pumice of three or foure dragmes, cannot be presumed to containe the hundreth part thereof, which will not be sensible upon the exactest beames we use: Nor is it to be taken strictly what is delivered by the learned Lord Verulam, and referred unto further experiment; That a dissolution of Iron in *Aqua fortis*, will beare as good weight as their bodies did before, notwithstanding a great deale of waste by a thick vapour that issueth during the working; for we cannot finde it to hold neither in Iron, nor Copper, which is dissolved with lesse ebullition; and hereof we made triall in Scales of good exactnesse, wherein if there be a defect, or such as will not turne upon quarter graines, there may be frequent mistakes in experiments of this nature: but stranger is that, and by the favourablest way of triall we cannot make out what is delivered by *Hamerus Poppius*, that Antimony calcin'd or reduced to ashes by a burning glasse, although it emitte a grosse and ponderous exhalation, doth rather exceed then abate its former gravity: whose words are these in his *Basilica Antimonii, Si speculum incensorium soli exponatur, ita ut pyramidis luminosæ apex Antimonium pulverisatum feriat, cum multo fumi profusione ad nivis albedinem calcinabitur, & quod mirabile est Antimonii pondus post calcinationem auctum potius quam diminutum deprehenditur*, Mistake may be made in this way of triall, when the Antimony is not weighed immediately upon the calcination, but permitted the ayre it imbibeth the humidity thereof, and so repayreth its gravity.

Chap. VIII.

Of the passage of meate and drinke.

That there are different passages for meate and drinke, the meate or dry aliment descending by the one, the drink or moystning vehicle by the other, is a popular Tenent in our dayes, but was the assertion of learned men of old, for the same was affirmed by Plato, maintained by Eustathius in Macrobius, and is deducible from Eratosthenes, Eupolis and Euripides: now herein men contradict experience, not well understanding

ſtanding Anatomy, and the uſe of parts; for at the throat there are two cavities or conducting parts, the one the Oeſophagus or gullet, ſeated next the ſpine, a part officiall unto nutrition, and whereby the aliment both wet and dry is conveyed unto the ſtomack; the other (by which tis conceived the drink doth paſſe) is the weazon, rough artery, or winde-pipe, a part inſervient to voyce and reſpiration, for thereby the ayre deſcendeth into the lungs, and is communicated unto the heart; and therefore all animals that breath or have lungs, have alſo the weazon, but many have the gullet or feeding channell, which have no lungs or winde-pipe; as fiſhes which have gills, whereby the heart is refrigerated, for ſuch thereof as have lungs and reſpiration, are not without the weazon, as Whales and cetaceous animals.

Againe, beſide theſe parts deſtin'd to divers offices, there is a peculiar proviſion for the winde-pipe, that is, a cartilagineous flap upon the opening of the Larinx or throttle, which hath an open cavity for the admiſſion of the ayre; but leſt thereby either meate or drinke ſhould deſcend, Providence hath placed the *Epiglottis Ligula*, or flap like an Ivy leafe, which alwayes cloſeth when we ſwallow, or that the meate and drinke paſſeth over it into the gullet, which part although all have not that breathe, as all cetaceous and oviparous animals, yet is the weazon ſecured ſome other way; and therefore in Whales that breathe, leſt the water ſhould get into the lungs, an ejection thereof is contrived by a Fiſtula or ſpout at the head; and therefore alſo though birds have no Epiglottis, yet can they ſo contract the rime or chinck of their Larinx, as to prevent the admiſſion of wet or dry ingeſted, either whereof getting in occaſioneth a cough, untill it be ejected; and this is the reaſon why a man cannot drink and breathe at the ſame time; why if we laugh while we drinke, the drinke flies out at the noſtrils, why when the water enters the weazon, men are ſuddenly drowned; and thus muſt it be underſtood, when wee reade of one that dyed by the ſeed of a Grape, and another by an hayre in milke.

Now if any ſhall ſtill affirme, that ſome truth there is in the aſſertion, upon the experiment of Hippocrates, who killing an Hog after a red potion, found the tincture thereof in the Larinx; if any will urge the ſame from medicall practiſe, becauſe in affections both of Lungs and weazon, Phyſitians make uſe of ſyrupes, and lambitive medicines; we are not averſe to acknowledge, that ſome may diſtill and inſinuate into the wind-pipe, and medicines may creep downe, as well as the rheume before them; yet to conclude from hence, that ayre and water have both one common paſſage, were to ſtate the queſtion upon the weaker ſide of the diſtinction, and from a partiall or guttulous irrigation, to conclude a full and totall deſcenſion.

CHAP.

Chap. IX.
Of Sneezing.

CONcerning Sternutation or Sneezing, and the cuſtome of ſaluting or bleſſing upon that motion, it is pretended, and generally beleeved to derive its originall from a diſeaſe, wherein Sternutation proved mortall, and ſuch as Sneezed dyed: and this may ſeeme to be proved from Carolus Sigonius, who in his Hiſtory of Italy, makes mention of a Peſtilence in the time of Gregorie the Great, that proved pernitious and deadly to thoſe that Sneezed; which notwithſtanding will not ſufficiently determine the grounds hereof, and it will evidently appeare, that cuſtome hath an elder Æra then this Chronologie affordeth.

For although the age of Gregorie extend above a thouſand, yet is this cuſtome mentioned by Apuleius in the fable of the Fullers wife, who lived three hundred yeers before; by Pliny likewiſe in that Probleme of his, our *Sternutantes ſalutantur*, and there are alſo reports that Tiberius the Emperour otherwiſe a very ſowre man, would performe this rite moſt punctually unto others, and expect the ſame from others, unto himſelf; Petronius Arbiter, who lived before them both, and was Proconſul of Bythinia in the raigne of Nero, hath mentioned it in theſe words, *Gyton collectione ſpiritus plenus, ter continuò ita ſternutavit ut grabatum concuteret, ad quem motum Eumolpus converſus, Salvere Gytona jubet.* Cælius Rhodiginus hath an example hereof among the Greeks, far antienter then theſe, that is, in the time of Cyrus the younger, when conſulting about their retreat, it chanced that one among them ſneezed, at the noyſe whereof, the reſt of the ſouldiers called upon Jupiter Soter; There is alſo in the Greeke Authologie a remarkeable mention hereof, in an Epigram upon one Proclus, the Latine whereof we ſhall deliver, as we finde it often tranſlated.

Non potis eſt Proclus digitis emungere naſum
namq́; eſt pro naſi mole puſilla manus,
Non vocat ille Iovem ſternutans, quippe nec audit
Se ſternutantem, tam procul aure ſonat.

Proclus with's hand his noſe can never wipe,
His hand too little is his noſe to grype;
He ſneezing calls not Iove, for why? he heares
himſelf not ſneeze, the ſound's ſo far from's ears: Nor was this onely an ancient cuſtome among the Greeks and Romanes, and is ſtill in force with us, but is received at this day in remoteſt parts of Africa; for ſo we read in Codignus, that upon a ſneeze of the Emperour of Monomotapa, there paſſed acclamations ſucceſſively through the city.

Now

Now the ground of this ancient cuſtome was probably the opinion the ancients held of Sternutation: which they generally conceived to be a good ſigne or a bad, and ſo upon this motion accordingly uſed, a Salve or Ζεῦ σῶσον, as a gratulation for the one, and a deprecation from the other: Now of the wayes whereby they enquired and determined its ſignality; the firſt was naturall ariſing from Phyſicall cauſes, and conſequencies of times naturally ſucceeding this motion; and ſo it might be juſtly eſteemed a good ſigne; for ſneezing being properly a motion of the braine, ſuddenly expelling through the noſtrils what is offenſive unto it, it cannot but afford ſome evidence of its vigour; and therefore ſaith Ariſtotle in his Problems, they that heare it σεμνὸν εἶναι τὸ θεῖον they honour it as ſomewhat Sacred, and a ſigne of Sanity in the diviner part; and this he illuſtrates from the practice of Phyſitians, who in perſons neere death doe uſe Sternutatories, or ſuch as provoke unto ſneezing; when if the facultie ariſe and Sternutation enſue, they conceive hopes of life, and with gratulation receive the ſignes of ſafetie; and ſo is it alſo of good ſignality in leſſer conſiderations, according to that of Hippocrates, that ſneezing cureth the hickett, and is profitable unto women in hard labour; and ſo is it of good ſignality in Lethargies, Apoplexies, Catalepſies, and Coma's: and in this naturall way it is ſomtime likewiſe of bad effects or ſignes, and may give hints of deprecation; as in diſeaſes of the cheſt, for therein Hippocrates condemneth itas too much exagitating in the beginning of Catarrhs according unto Avicenna as hindering concoction, in new and tender conceptions, (as Pliny obſerveth) for then it endangers abortion.

The ſecond way was ſuperſtitious and Augurial, as Cælius Rhodiginus hath illuſtrated in teſtimonies, as ancient as Theocritus and Homer; as appears from the Athenian maſter, who would have retired, becauſe a boatman ſneezed, and the teſtimony of Auſtine, that the Ancients were wont to goe to bed againe if they ſneezed while they put on their ſhooe; and in this way it was alſo of good and bad ſignification; ſo Ariſtotle hath a Probleme, why ſneezing from noone unto midnight was good, but from night to noon unlucky? So Euſtathius upon Homer obſerves, that ſneezing to the left hand was unlucky, but proſperous unto the right; and ſo as Plutarch relateth, when Themiſtocles ſacrificed in his galley before the battell of Xerxes, and one of the aſſiſtants upon the right hand ſneezed, Euphrantides the Southſayer preſaged the victorie of the Greekes, and the overthrow of the Perſians.

And thus wee may perceive the cuſtome is more ancient then commonly is conceived, and theſe opinions hereof in all ages, not any one diſeaſe to have been the occaſion of this ſalute and deprecation; ariſing at firſt from this vehement and affrighting motion of the braine, inevitably obſervable unto the ſtanders by; from whence ſome finding dependent

pendent effects to ensue, others ascribing hereto as a cause what perhaps but casually or inconexedly succeeded, they might proceed unto forms of speeches, felicitating the good, or deprecating the evil to follow.

Chap. X.

Of the Iewes. STINKING

THat Jews stinck naturally, that is, that in their race and nation there is δυσωδία or evil savour, is a received opinion, wee know not how to admit; although we concede many questionable points, and dispute not the verity of sundry opinions which are of affinity hereto: we will acknowledge that certaine odours attend on animalls, no lesse then certaine colours; that pleasant smels are not confined unto vegetables, but found in divers animalls, and some more richly then in plants: and though the Probleme of Aristotle enquire why none smells sweet beside the parde? yet later discoveries adde divers sorts of Monkeys, the Civet cat, and Gazela, from which our muske proceedeth: we confesse that beside the smell of the species, there may be Individuall odours, and every man may have a proper and peculiar savour; which although not perceptible unto man, who hath this sense, but weake, yet sensible unto dogges, who hereby can single out their Masters in the dark: wee will not deny that particular men have sent forth a pleasant savour, as Theophrastus and Plutark report of Alexander the great, and Tzetzes and Cardan doe testifie of themselves; That some may also emit an unsavoury odour, we have no reason to deny, for this may happen from the qualitie of what they have taken, the Fætor whereof may discover it self by sweat and urine, as being unmasterable by the naturall heat of man, nor to be dulcified by concoction beyond an unsavoury condition: the like may come to passe from putrid humors, as is often discoverable in putrid & malignant fevers; and somtime also in grosse and humide bodies even in the latitude of sanity; the naturall heat of the parts being insufficient for a perfect and through digestion, and the errors of one concoction not rectifiable by another: but that an unsavoury odour is gentilitious or national unto the Jews, if rightly understood, we cannot well concede, nor will the information of reason or sense induce it.

For first upon consult of reason, there will bee found no easie assurance for to fasten a materiall or temperamentall propriety upon any nation; there being scarce any condition (but what depends upon clime) which is not exhausted or obscured from the commixture of introvenient nations either by commerce or conquest; much more will it be difficult to make out this affection in the Jewes, whose race how ever pretended to be pure, must needs have suffered inseparable commixtures with nations of all sorts, not onely in regard of their proselytes, but their universall dispersion; some being posted from severall parts of the earth, others quite lost, and swallowed up in those nations where they planted: for the tribes of Ruben, Gad, part of Manasses

and Naphthali, which were taken by Assur, and the rest at the sacking of Samaria which were led away by Salmanasser, into Assyria, and after a yeare and half, and arived at Arsereth as is delivered in Esd ras, these I say never returned, and are by the Jewes as vainly expected as their Messias: of those of the tribe of Juda and Benjamin, which were led captive into Babylon by Nebuchadnezzar many returned under Zorobabel, the rest remained, and from thence long after upon invasion of the Saracens, fled as far as India; where yet they are said to remaine, but with little difference from the Gentiles.

The tribes that returned to India, were afterward widely dispersed; for beside sixteene thousand which Titus sent to Rome unto the triumph of his father Vespasian, hee sold no lesse then an hundred thousand for slaves; not many yeeres after Adrian the Emperour, who ruined the whole Countrey, transplanted many thousands into Spaine, from whence they dispersed into divers Countreys, as into France, and England, but were banished after from both: from Spaine they dispersed into Africa, Italy, Constantinople, and the dominions of the Turke, where they remaine as yet in very great numbers, and if (according to good relations) where they may freely speake it, they forbeare not to boast that there are at present many thousand Jewes in Spaine, France, and England, and some dispensed withall, even to the degree of Priesthood; it is a matter very considerable, and could they be smelled out, would much advantage, not onely the Church of Christ, but also the coffers of Princes.

Now having thus lived in severall Countreyes, and alwayes in subjection, they must needs have suffered many commixtures, and wee are sure they are not exempted from the common contagion of Venerie contracted first from Christians; nor are fornications unfrequent between them both, there commonly passing opinions of invitement, that their women desire copulation with them, rather then their owne nation, and affect Christian carnality above circumcised venery. It being therefore acknowledged, that some are lost, evident that others are mixed, and scarce probable that any are distinct, it will be hard to establish this quality upon the Iews, unlesse we also transferre the same, unto those whose generations are mixed, whose genealogies are Jewish, and naturally derived from them.

Againe, if we concede a nationall unsavourinesse in any people, yet shall we finde the Iewes lesse subject hereto then any, and that in those regards which most powerfully concurre to such effects, that is, their diet and generation; As for their diet, whether in obedience unto the precepts of reason, or the Injunctions of parsimony, therein they are very temperate, seldome offending in ebrietie or excesse of drink, nor erring in gulosity or superfluity of meats; whereby they prevent indigestion and crudities, and consequently putrescence of humors; they

have

have in abomination all fleſh maymed, or the inwards any way vitiated, and therefore eate no meate but of their owne killing. They obſerve not onely faſts at certaine times, but are reſtrained unto very few diſhes at all times; ſo few, that whereas S.Peters ſheet will hardly cover our tables, their Law doth ſcarce permit them to ſet forth a Lordly feaſt, nor any way to anſwer the luxurie of our times, or thoſe of our forefathers; for of fleſh their Law reſtraines them many ſorts, and ſuch as compleate our feaſts: That animal, *Propter convivia natum*, they touch not, nor any of its preparations, or parts ſo much in requeſt at Roman tables; nor admit they unto their board, Hares, Conies, Herons, Plovers, or Swans: Of Fiſhes, they onely taſte of ſuch as have both finnes and ſcales, which are comparatively but few in number, ſuch onely, ſaith Ariſtotle, whoſe egge or ſpawne is arenaceous and friable, whereby are excluded all cetaceous and cartilagineous fiſhes, many pectinall, whoſe ribs are rectilineall, many coſtall, which have their ribs embowed, all ſpinall, or ſuch as have no ribs, but onely a back bone, or ſomewhat analogous thereto, as Eeles, Congers, Lampries; all that are teſtaceous, as Oyſters, Cocles, Wilks, Schollops, Muſcles, and likewiſe all cruſtaceous, as Crabs, Shrimps, and Lobſters; So that obſerving a ſpare and ſimple dyet, whereby they prevent the generation of crudities, and faſting often, whereby they might alſo digeſt them, they muſt be leſſe inclinable unto this infirmity then any other Nation, whoſe proceedings are not ſo reaſonable to avoid it.

As for their generations and conceptions, (which are the purer from good dyet) they become more pure and perfect by the ſtrict obſervation of their Law; upon the injunctions whereof, they ſeverely obſerve the times of Purification, and avoid all copulation, either in the uncleanneſſe of themſelves, or impurity of their women; A rule, I feare not ſo well obſerved by Chriſtians, whereby not onely conceptions are prevented, but if they proceed, ſo vitiated and defiled, that durable inquinations, remaine upon the birth, which when the conception meets with theſe impurities, muſt needs be very potent, ſince in the pureſt and moſt faire conceptions, learned men derive the cauſe of Pox and Meazels, from principles of that nature, that is, the menſtruous impurities in the mothers bloud, and the virulent tinctures contracted by the Infant, in the nutriment of the wombe.

Laſtly, experience will convict it, for this offenſive odor is no way diſcoverable in their Synagogues where many are, and by reaſon of their number could not be concealed; nor is the ſame diſcernible in commerce or converſation with ſuch as are cleanly in apparell, and decent in their houſes; ſurely the Viziars and Turkiſh Baſha's are not of this opinion, who as Sir Henry Blunt informeth, doe generally keepe a Jew of their private Counſell; and were this true, the Jews themſelves do not ſtrictly make out the intention of their Law, for in vaine

do they ſcruple to approach the dead, who livingly are cadaverous, or feare any outward pollution, whoſe temper pollutes themſelves. And laſtly, were this true, our opinion is not impartiall, for unto converted Jews who are of the ſame ſeed, no man imputeth this unſavoury odor; as though Aromatized by their converſion, they admitted their ſent with their Religion, and they ſmelt no longer then they ſavoured of the Jew.

Now the ground that begat or propagated this aſſertion might be the diſtaſtfull averſeneſſe of the Chriſtian from the Jew, from their corruptneſſe, and the villany of that fact, which made them abominable and ſtinck in the noſtrils of all men; which reall practiſe, and metaphoricall expreſſion, did after proceed into a literall conſtruction; but was a fraudulent illation; for ſuch an evill ſavour their father Jacob acknowledged in himſelfe, when he ſaid, his ſons had made him ſtinke in the land, that is, to be abominable unto the inhabitants thereof: Now how dangerous it is in ſenſible things to uſe metaphoricall expreſſions unto the people, and what abſurd conceits they will ſwallow in their literals, an impatient example wee have in our owne profeſſion, who having called an eating Ulcer by the name of a Wolfe, common apprehenſion conceives a reality therein, and againſt our ſelves ocular affirmations are pretended to confirme it.

The naſtineſſe of that Nation, and fluttiſh courſe of life hath much promoted the opinion, occaſioned by their ſervile condition at firſt, and inferiour wayes of parſimony ever ſince; as is delivered by Mr. Sandys, They are generally fat, ſaith he, and ranck of the ſavours which attend upon fluttiſh corpulency: The Epithites aſſigned them by ancient times have alſo advanced the fame; for Ammianus Marcellinus deſcribeth them in ſuch language, and Martiall more ancient, in ſuch a relative expreſſion ſets forth unſavoury Baſſa,

Quod jejunia Sabbatariorum
Mallem, quam quod oles, olere Baſſa.——From whence notwithſtanding wee cannot inferre an inward imperfection in the temper of that Nation, which was but an effect in the breath from outward obſervation, in their ſtrict and tedious faſting; and was a common effect in the breaths of other Nations, became a proverbe among the Greeks, and the reaſon thereof occaſioned a Probleme in Ariſtotle.

Νηστείας ὄζει, *Jejunia olere.*

Laſtly, if all were true, and were this favour conceded, yet are the reaſons alleadged for it no way ſatisfactory: Hucherius in his Tract *de ſterilitate*, and after him Alſarius Crucius in his medicall Epiſtles, imputes this effect unto their abſtinence from ſalt or ſalt meats; which how to make good in the preſent dyet of the Jews we know not, nor ſhall we conceive it was obſerved of old, if we conſider they ſeaſoned every ſacrifice, and all oblations whatſoever, whereof we cannot deny a great part was eaten by the Prieſts; and if the offering were of fleſh it

was salted no lesse then thrice, that is, once in the common chamber of salt, at the footestep of the Altar, and upon the top thereof, as is at large delivered by Maimonides: nor if they refrained all salt, is the illation very urgent; for many there are not noted for ill odors, which eate no salt at all, as all carnivorous animals, most children, many whole Nations, and probably our Fathers after the Creation; there being indeed in every thing we eate, a naturall and concealed salt, which is separated by digestions, as doth appeare in our teares, sweat and urines, although we refraine all salt, or what doth seeme to containe it.

Another cause is urged by Campegius, and much received by Christians, that this ill savour is a curse derived upon them by Christ, and stands as a badge or brand of a generation that crucified their *Salvator*; but this is a conceit without all warrant, and an easie way to take off dispute in what point of obscurity soever: a method of many Writers, which much depreciates the esteeme and value of miracles, that is, therewith to salve not onely reall verities, but also non-existences: Thus have elder times, not onely ascribed the immunitie of Ireland from any venemous beast, unto the staffe or rod of Patrick, but the long tayles of Kent unto the malediction of Austin.

Thus therefore, although we concede that many opinions are true which hold some conformity unto this, yet in assenting hereto, many difficulties must arise, it being a dangerous point to annex a constant property unto any Nation, and much more this unto the Jew; since 'tis not verifiable by observation, since the grounds are feeble that should establish it, and lastly, since if all were true, yet are the reasons alleadged for it, of no sufficiency to maintaine it.

Chap. XI.

Of Pigmies.

By Pigmies we understand a dwarfish race of people, or lowest diminution of mankinde, comprehended in one cubit, or as some will have it, in two foot, or three spans; not taking them single, but nationally considering them, and as they make up an aggregated habitation, whereof although affirmations be many, and testimonies more frequent then in any other point which wise men have cast into the list of fables, yet that there is, or ever was such a race or Nation, upon exact and confirmed testimonies, our strictest enquiry receaves no satisfaction.

I say, exact testimonies, first, in regard of the Authors from whom we derive the account, for though wee meet herewith in Herodotus, Philostratus, Mela, Pliny, Solinus, and many more; yet were they derivative Relators, and the primitive Author was Homer; who, not onely

onely intending profit but pleasure, and using often similies, as well to delight the eare, as to illustrate his matter, in the third of his Iliads, compareth the Trojanes unto the Cranes, when they discend against the Pigmies; which was more largely set out by Oppian, Juvenall, Mantuan, and many Poets since; and being onely a pleasant similitude in the fountaine, became a solemne story in the streame, and current still among us.

Againe, many professed enquirers have rejected it; Strabo an exact and judicious Geographer, hath largely condemned it as a fabulous story in the first of his Geographie. Julius Scaliger a diligent enquirer, accounts thereof, but as a Poeticall fiction; Vlysses Aldrovandus a most exact Zoographer in an expresse discourse hereon, concludes the story fabulous, and a poetical account of Homer; and the same was formerly conceived by Eustathius his excellent commentator, *Albertus Magnus* a man oftimes too credulous, herein was more then dubious, for he affirmeth, if any such dwarfes were ever extant, they were surely some kinde of Apes; which is a conceit allowed by Cardan, and not esteemed improbable by many others.

There are I confesse two testimonies, which from their authority admit of consideration. The first of Aristotle, whose words are these, in the eighth of his History of animals, Ἔτι δὲ ὁ τόπος &c. That is, *Hic locus est quem incolunt Pygmei, non enim id fabula est sed pusillum genus, ut aiunt.* Wherein indeed Aristotle playes the Aristotle, that is, the wary and evading assertor; For though with *non est in fabula*, he seem at first to confirme it, yet at the last he claps in, *Sicut aiunt*, and shakes the beliefe he put before upon it; and therefore I observe Scaliger hath not translated the first, perhaps supposing it surreptitious, or unworthy so great an assertor: and truely for those bookes of animals, or worke of eight hundred talents, as Atheneus termes it, although it bee ever to bee admired, and containe most excellent truths, yet are many things therein delivered upon relation, and some things repugnant unto the history of our senses; as wee are able to make out in some, and Scaliger hath observed in many more, as he hath freely declared himselfe in his Comment upon that peece.

The second testimony is deduced from holy Canonicall Scripture; that is, Ezech. 27. verse 11. thus rendred in the vulgar translation, *Sed & Pygmæi qui erant in turribus tuis pharetras suas suspenderunt in muris tuis per gyrum:* from whence notwithstanding we cannot inferre this assertion; for first the Translatours accord not, and the Hebrew word *Gamadim* is very variously rendred: Though Aquila, Varablus and Lyra will have it Pygmæi, yet in the Septuagint, it is no more then Watchmen; in the Chaldie, Cappadocians; in Symmachus, Medes; Theodotion of old, and Tremellius of late, have retained the Textuarie word, and so have the Italian, French, and English Translatours, that

that is, the men of Arvad were upon thy walles round about, and the Gammadims were in thy towers.

Nor doe men onely diffent in the Tranſlation of the word, but in the expoſition of the ſenſe and meaning thereof, for ſome by Gammadims underſtand a people of Syria, ſo called from the city Gamala; ſome hereby underſtand the Cappadocians, many the Medes, and hereof Forerius hath a ſingular expoſition, conceiving the watchmen of Tyre, who might well bee called Pigmies, the towers of that City being ſo high, that unto men below they appeared in a cubitall ſtature; others expounded it quite contrary to common acception that is not men of the leaſt, but of the largeſt ſize; ſo doth Cornelius conſtrue *Pygmæi* or *viri cubitales*, that is not men of a cubit high, but of the largeſt ſtature, whoſe height like that of Giants is rather to be taken by the cubit then the foot; in which phraſe we read the meaſure of Goliah whoſe height is ſaid to be ſix cubits and a ſpan: of affinity hereto is alſo the expoſition of Jerom, not taking Pygmies for Dwarffes, but ſtout and valiant Champions; not taking that ſenſe of πυγμὴ, which ſignifies the cubit meaſure, but that which expreſſeth pugills, that is, men fit for combat and the exerciſe of the fiſt: Thus can there bee no ſatisfying illation from this text, the diverſity or rather contrariety of Expoſitions and Interpretations, diſtracting more then confirming the truth of the ſtory.

Againe, I ſay exact teſtimonies in reference unto its circumſtantiall relations ſo diverſly or contrarily delivered; thus the relation of Ariſtotle placeth above Ægypt towards the head of Nyle in Africa; Philoſtratus affirmes they are about Ganges in Aſia, and Pliny in a third place, that is Geravia in Scythia: ſome write they fight with Cranes, but Menecles in Atheneus affirmes they fight with Partridges, ſome ſay they ride on Partridges, and ſome on the backs of Rams.

Laſtly, I ſay confirmed teſtimonies; for though *Paulus Iovius* delivers there are Pygmies beyond Japan, Pigafeta, about the Molucca's, and Olaus Magnus placeth them in Greenland; yet wanting frequent confirmation in a matter ſo confirmable, their affirmation carrieth but ſlow perſwaſion; and wiſe men may thinke there is as much reallity in the Pygmies of Paracelſus; that is, his non-Adamicall men, or middle natures betwixt men and ſpirits.

There being thus no ſufficient confirmation of their verity, ſome doubt may ariſe concerning their poſſibility; wherein, ſince it is not defined in what dimenſions the ſoule may exerciſe her faculties, wee ſhall not conclude impoſſibility, or that there might not be a race of Pygmies, as there is ſometimes of Giants; and ſo may we take in the opinion of Auſtine, and his Comment Ludovicus; but to beleeve they ſhould be in the ſtature of a foot or ſpan, requires the preaſpection of ſuch a one as Philetas the Poet in Athenæus, who was faine to faſten

lead

lead unto his feet lest the wind should blow him away, or that other in the same Author, who was so little *ut ad obolum accederet*, a story so strange that we might herein accuse the Printer, did not the account of Ælian accord unto it, as Causabone hath observed in his learned Animadversions.

Lastly, if any such Nation there were, yet is it ridiculous what men have delivered of them; that they fight with Cranes upon the backs of Rams or Partridges: or what is delivered by Ctesias that they are Negroes in the middest of India, whereof the King of that Country entertaineth three thousand Archers for his guard; which is a relation below the tale of Oberon, nor could they better defend him, then the Emblem saith they offended Hercules whilest he slept, that is to wound him no deeper, then to awake him.

Chap. XII.

Of the great Climacterical yeare, that is sixty three.

CErtainly the eyes of the understanding, and those of sense are differently deceived in their greatest objects; the sense apprehending them in lesser magnitudes then their dimensions require; so it beholdeth the Sunne, the Starres, and the Earth it selfe; but the understanding quite otherwise, for that ascribeth unto many things far larger horizons then their due circumscriptions require, and receiveth them with amplifications which their reallity will not admit: thus hath it fared with many Heroes and most worthy persons, who being sufficiently commendable from true and unquestionable merits, have received advancement from falshood and the fruitfull stocke of fables: Thus hath it happened unto the stars and luminaries of heaven, who being sufficiently admirable in themselves have been set out by effects no way dependent on their efficiencies, and advanced by amplifications to the questioning of their true endowments: Thus is it not improbable it hath also fared with number, which though wonderfull in it selfe, and sufficiently magnifyable from its demonstrable affections, hath yet received adjections of admiration from the multiplying conceits of men, and stands laden with additions which its equity will not admit.

And so perhaps hath it happened unto the number 7. and 9. which multiplyed into themselves doe make up 63. commonly esteemed the great Climacterical of our lives; for the dayes of men are usually cast up by septenaries, and every seventh yeare conceived to carry some altering character with it, either in the temper of body, minde, or both; but among all other, three are most remarkable, that is 7. times 7. or forty nine, 9. times 9. or eighty one, and 7. times 9. or the yeare of sixty

sixty three; which is conceived to carry with it, the most considerable fatality, and consisting of both the other numbers was apprehended to comprise the vertue of either, is therefore expected and entertained with feare, and esteemed a favour of fate to passe it over; which notwithstanding many suspect to be but a Panick terrour, and men to feare they justly know not what; and for my owne part, to speake indifferently, I finde no satisfaction, nor any sufficiency in the received grounds to establish a rationall feare.

Now herein to omit Astrologicall considerations (which are but rarely introduced) the popular foundation whereby it hath continued is first, the extraordinary power and secret vertue conceived to attend these numbers, whereof we must confesse there have not wanted not onely especiall commendations, but very singular conceptions. Among Philosophers, Pythagoras seemes to have played the leading part, which was long after continued by his disciples, and the Italicke Schoole, the Philosophy of Plato, and most of the Platonists abound in numerall considerations; above all Philo the learned Jew, hath acted this part even to superstition, bestowing divers pages in summing up every thing which might advantage this number: All which notwithstanding when a serious Reader shall perpend, hee will hardly finde any thing that may convince his judgement or any further perswade, then the levity of his belief, or prejudgement of reason inclineth.

For first, not only the number of 7 and 9 from considerations abstruse have been extolled by most, but all or most of the other digits have been as mystically applauded by many; for the number of one and three have not been only admired by the heathens, but from adorable grounds, the unity of God, and mystery of the Trinity admired by many Christians. The number of foure stands much admired not only in the quaternity of the Elements, which are the principles of bodies, but in the letters of the name of God, which in the Greeke, Arabian, Persian, Hebrew, and Ægyptian, consisteth of that number; and was so venerable among the Pythagoreans, that they swore by the number foure. That of six hath found many leaves in its favour, not only for the dayes of the Creation, but its naturall consideration, as being a perfect number, and the first that is compleated by its parts; that is, the sixt, the half, and the third, 1. 2. 3. which drawne into a sum make six: The number of ten hath been as highly extolled, as containing even, odde, long and plaine, quadrate and cubicall numbers; and Aristotle observed with admiration, that Barbarians as wellas Greeks, did use a numeration unto Ten; which being so generall was not to be judged casuall, but to have a foundation in nature: So that only 7 and 9, but all the rest have had their Elogies, as may be observed at large in Rhodiginus, and in severall Writers since: every one extolling number, according to his subject, & as it advantaged the present discourse in hand.

Again, they have been commended not only from pretended grounds in nature, but from artificiall, casuall, or fabulous foundations; so have some endeavoured to advance their admiration, from the 9 Muses, from the 7 Wonders of the World, and from the 7 gates of Thebes, in that 7 Cities contended for Homer, in that there are 7 stars in Ursa minor, and 7 in Charles wayne or Plaustrum of Ursa major; wherein indeed although the ground be naturall, yet either from constellations or their remarkable parts, there is the like occasion to commend any other number; the number 5 from the starres in Sagitta, 3 from the girdle of Orion, and 4 from Equiculus, Crusero, or the feet of the Centaure; yet are such as these clapt in by very good Authors, and some not omitted by Philo.

Nor are they only extolled from Arbitrary and Poeticall grounds, but from foundations and principles either false or dubious: That women are menstruant and men pubescent at the year of twice seven, is accounted a punctuall truth; which period nevertheless we dare not precisely determine, as having observed a variation and latitude in most, agreeably unto the heat of clime or temper; men arising variously unto virility, according to the activity of causes that promote it, *Sanguis menstruosus ad diem, ut plurimum, septimum durat*, saith Philo; which notwithstanding is repugnant unto experience, and the doctrine of Hippocrates, who in his booke, *de diæta* plainly affirmeth, it is thus but with few women, and onley such as abound with pituitous and watery humors.

It is further conceived to receive addition, in that there are 7 heads of Nyle, but we have made manifest elsewhere that by the description of Geographers they have beene sometime more, and are at present fewer.

In that there were 7 wise men of Greece; which though it be generally received, yet having enquired into the verity thereof, we cannot so readily determine it; for in the life of Thales who was accounted in that number, Diogenes Laertius plainly saith *Magna de eorum numero discordia est*, some holding but foure, some ten, others twelve, and none agreeing in their names, though according in their number.

In that there are just seven Planets or errant Starres in the lower orbs of heaven; but it is now demonstrable unto sense, that there are many more, as Galileo hath declared in his *Nuncius Sydereus*; that is two more in the orbe of Saturne, and no lesse then foure more in the sphere of Jupiter: and the like may be said of the Pleiades or 7 Starres, which are also introduced to magnifie this number; for whereas scarce discerning six, we account them 7, by his relation in the same booke, there are no lesse then forty.

That the heavens are encompassed with 7 circles, is also the allegation of Philo; which are in his account, The Artick, Antartick, the

Summer

Summer and Winter Tropicks, the Æquator, Zodiack and the milky circle, whereas by Aſtronomers they are received in greater number; for though we leave out the Lacteous circle (which Aratus, Geminus, and Proclus out of him hath numbred among the reſt) yet are there more by foure then Philo mentions, that is, the Horizon, Meridian and both the Colures; circles very conſiderable and generally delivered, not only by Ptolomie and the Aſtronomers ſince his time, but ſuch as flouriſhed long before, as Hipparchus and Eudoxus: So that for ought I know, if it make for our purpoſe, or advance the theme in hand, with equall liberty, we may affirme there were 7 Sybills, or but 7 ſignes in the Zodiack circle of heaven.

That verſe in Virgill tranſlated out of Homer, *O terq; quaterq; beati*; that is, as men will have it 7 times happy hath much advanced this number in criticall apprehenſions; yet is not this conſtruction ſo indubitably to be received, as not at all to be queſtioned: for though Rhodiginus, Beroaldus & others from the authority of Macrobius ſo interpret it, yet Servius the beſt of his Comments conceives no more thereby then a finite number for indefinite, and that no more is implied then often happy. Strabo the ancienteſt of them all, in the firſt of his Geography conceives no more by this expreſſion in Homer, then a full and exceſſive expreſſion; whereas in common phraſe and received language hee ſhould have tearmed them thrice happy, herein exceeding that number he called them foure times happy that is more then thrice; and this he illuſtrates by the like expreſſion of Homer in the ſpeech of Circe, who to expreſſe the dread and terrour of the Ocean, ſticks not unto the common forme of ſpeech in the ſtrict account of its reciprocations, but largely ſpeaking ſaith, it ebbes and flows no leſſe then thrice a day, *terq; die revomit fluctus, iterumq; reſorbet*; and ſo when 'tis ſaid by Horace, *felices ter & amplius*, the expoſition is ſufficient, if we conceive no more then the letter fairely beareth, that is, foure times, or indefinitly more then thrice.

But the maine conſiderations which moſt ſet of this number are obſervations drawne from the motions of the Moone, ſuppoſed to bee meaſured by ſevens; and the criticall or decretory dayes dependent on that number. As for the motion of the Moon, though we grant it to be meaſured by ſevens, yet will not this advance the ſame before its fellow numbers; for hereby the motion of others are not meaſured, the fixed Starres by many thouſand yeares, the Sunne by 365. dayes, the ſuperiour Planets by more, the inferiour by ſomewhat leſſe: and if we conſider the revolution of the firſt Moveable, & the daily motion from Eaſt to Weſt, common unto all the orbs, we ſhall find it meaſured by another number; for being performed in four & twenty hours, it is made up of 4 times 6: and this is the meaſure and ſtandard of other parts of time, of months, of years, Olympiades, Luſtres, Indictions, Cycles, Jubilies, &c.

Againe, months are not onely Lunary, and measured by the Moon, but also Solary, and determined by the motion of the Sun, that is, the space wherein the Sun doth passe 30. degrees of the Eccliptick; by this month Hippocrates computed the time of the Infants gestation in the wombe, for 9. times 30. that is, 270. dayes, or compleat 9. months make up forty weeks the common compute of women, and this is to be understood in his booke *De octimestri partu*, when he saith, 2. dayes makes the fifteenth, and 3. the tenth part of a month; this was the month of the ancient Hebrewes before their departure out of Ægypt; and hereby the compute will fall out right, and the account concurre, when in one place it is said, the waters of the flood prevayled an hundred and fifty dayes, and in another it is delivered, that they prevailed from the seventeenth day of the second month, unto the seventeenth day of the seventh: and as for weeks, although in regard of their Sabboths they were observed by the Hebrewes, yet is it not apparent, the ancient Greeks, or Romans used any, but had another division of their months into Ides, Nones, and Calends.

Moreover, months howsoever taken are not exactly divisible into septuaries or weeks, which fully containe seven dayes, whereof foure times do make compleatly twenty eight; for, beside the usuall or Calendary month, there are but foure considerable, that is, the month of Peragration, of Apparition, of Consecution, and the medicall or Decretoriall month, whereof some come short, others exceed this account. A month of Peragration, is the time of the Moones revolution from any part of the Zodiack, unto the same againe, and this containeth but 27. dayes, and about 8. howres, which commeth short to compleat the septenary account. The month of Consecution, or as some will terme it, of Progression, is the space betweene one conjunction of the Moon with the Sun unto another, and this containeth 29. dayes and an halfe; for the Moone returning unto the same point wherein it was kindled by the Sun, and not finding it there againe, (for in the meane time, by its proper motion it hath passed through 2. signes) it followeth after, and attaines the Sun in the space of 2. dayes, and 4. howres more, which added unto the account of Peragration, makes 29. dayes and an halfe; so that this month exceedeth the latitude of Septenaries, and the fourth part comprehendeth more then 7. dayes. A month of Apparition, is the space wherein the Moone appeareth, (deducting three dayes wherein it commonly disappeareth; and being in combustion with the Sun, is presumed of lesse activity) and this containeth but 26. dayes, and 12. howres. The Medicall month not much exceedeth this, consisting of 26. dayes, and 22. howres, and is made up out of all the other months; for if out of 29. and an halfe, the month of Consecution, we deduct 3. dayes of disappearance, there will remaine the month of Apparition 26. dayes, and 12. howres, whereto if wee adde

adde 27. dayes and 8. howres, the month of Peragration, there will arise 53. dayes and 10. howres, which divided by 2. makes 26. dayes and 22. howres, called by Physitians the medicall month; introduced by Galen against Archigenes, for the better compute of Decretory or Criticall dayes.

As for criticall dayes, (such I meane wherein upon a decertation betweene the disease and nature, there ensueth a sensible alteration, either to life, or death) the reasons thereof are rather deduced from Astrology, then Arithmetick; for accounting from the beginning of the disease, and reckoning on unto the seventh day, the Moone will be in a Tetragonall or Quadrate aspect, that is, 4. signes removed from that wherein the disease began; in the 14. day it will bee in an opposite aspect, and at the end of the third septenary Tetragonall againe, as will most graphically appeare in the figures of Astrologers, especially Lucas Gauricus, *De diebus decretoriis.*

Againe, (beside that computing by the medicall month the first hebdomade or septenary consists of 6. dayes, 17. howres and an halfe, the second happeth in 13. dayes and eleven howres, and the third but in the twentieth naturall day) what Galen first, and Aben-Ezra since observed in his Tract of Criticall dayes, in regard of Eccentricity and the Epicycle or lesser orbe wherein it moveth, the motion of the Moone is various and unequall, whereby the criticall account must also vary: for though its middle motion be equall, and of 13. degrees, yet in the other it moveth sometimes fifteene, sometimes lesse then twelve; for moving in the upper part of its orbe, it performeth its motion more slowly then in the lower, insomuch that being at the height it arriveth at the Tetragonall and opposite signes sooner, and the Criticall day will be in 6. and 13. and being at the lowest, the criticall account will be out of the latitude of 7. nor happen before the 8. or ninth day, which are considerations not to be neglected in the compute of decretory dayes, and manifestly declare that other numbers must have a respect herein as well as 7. and fourteene.

Lastly, some things to this intent are deduced from holy Scripture; thus is the yeare of Jubilie introduced to magnifie this number, as being a yeare made out of 7. times 7. wherein notwithstanding there may be a misapprehension; for this ariseth not from 7. times 7. that is, 49. but was observed the fiftieth yeare, as is expressed, Levit. 25. And you shall hallow the fiftieth yeare, a Jubilie shall that fiftieth yeare be unto you; answerable whereto is the exposition of the Jews themselves, as is delivered by Ben-maimon, that is, the yeare of Jubilie commeth not into the account of the years of 7. but the forty ninth is the Release, and the fiftieth the yeare of Jubilie. Thus is it also esteemed no small advancement unto this number, that the Genealogy of our Saviour is summed up by 14. that is, this number doubled, according as is expressed,

sed, Mat. 1. So all the generations from Abraham to David are foureteene generations, and from David unto the carrying away into Babylon, are foureteene generations, and from the carrying away into Babylon unto Christ, are fourteene generations, which nevertheleſſe muſt not be ſtrictly underſtood as numerall relations require; for from David unto Jeconiah are accounted by Matthew but 14. generations, whereas according to the exact account in the hiſtory of Kings, there were at leaſt 17. and 3. in this account, that is, Ahazias, Joas, and Amazias are left out: for ſo it is delivered by the Evangeliſt; And Joram begat Ozias; whereas in the Regall genealogy there are 3. ſucceſſions betweene, for Ozias or Uzziah, was the ſon of Amazias, Amazias of Joas, Joas of Azariah, and Azariah of Joram, ſo that in ſtrict account Joram was the Abavus or grandfather twice removed, and not the father of Ozias, and theſe omitted deſcents made a very conſiderable meaſure of time, in the Royall chronology of Judah; for though Azariah reigned but one yeare, yet Joas reigned forty, and Amazias no leſſe then nine and twenty: However therefore theſe were delivered by the Evangeliſt, and carry no doubt an incontroulable conformity unto the intention of his delivery, yet are they not appliable unto preciſe numerality, nor ſtrictly to be drawne unto the rigid teſt of numbers.

Laſtly, though many things have beene delivered by Authors concerning number, and they transferred unto the advantage of their nature, yet are they oftimes otherwiſe to be underſtood, then as they are vulgarly received in active and cauſall conſiderations; they being many times delivered Hieroglyphically, metaphorically, illuſtratively, and not with reference unto action, or cauſality. True it is, that God made all things in number, weight, and meaſure, yet nothing by them or through the efficacy of either; Indeed our dayes, actions, and motions being meaſured by time (which is but motion meaſured) what ever is obſervable in any, falls under the account of ſome number; which notwithſtanding cannot be denominated the cauſe of thoſe events; and ſo doe we injuſtly aſſigne the power of Action even unto Time it ſelf, nor doe they ſpeake properly who ſay that Time conſumeth all things; for Time is not effective, nor are bodies deſtroyed by it, but from the action and paſſion of their Elements in it, whoſe account it onely affordeth, and meaſuring out their motion, informes us in their periods and termes of their duration, rather then effecteth, or phyſically produceth the ſame.

A ſecond conſideration which promoteth this opinion, are confirmations drawne from Writers, who have made obſervations or ſet downe favourable reaſons for this climacteriall yeare; ſo have *Henricus Ranzovius*, *Baptiſta Codronchus*, and *Levinus Lemnius* much confirmed the ſame; but above all, that memorable Letter of Auguſtus

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ſent unto his Nephew Caius, wherein he encourageth him to celebrate his nativitie, for he had now eſcaped 63. the great Climacterical and dangerous yeare unto man; which notwithſtanding rightly perpended, it can be no ſingularity to queſtion it, nor any new Paradox to deny it.

For firſt it is implicitely, and upon conſequence denyed by Ariſtotle in his Politicks, in that diſcourſe againſt Plato, who meaſured the viciſſitude and mutation of States, by a periodicall fatality of number: Ptolomie that famous Mathematician plainly ſaith, he will not deliver his doctrines by parts and numbers which are ineffectuall, and have not the nature of cauſes; now by theſe numbers ſaith Rhodiginus and Mirandula, he implyeth Climacterical years, that is, ſeptenaries, and novenaries ſet downe by the bare obſervation of numbers: Cenſorinus an Author of great authority, and ſufficient antiquitie, ſpeakes yet more amply in his booke *De die Natali*, wherein expreſly treating of Climacterical dayes, hee thus delivereth himſelfe: Some maintaine that 7. times 7. that is, 49. is moſt dangerous of any other, and this is the moſt generall opinion, others unto 7. times 7. adde 9. times 9. that is, the yeare of 81. both which conſiſting of ſquare and quadrate numbers, were thought by Plato and others to bee of great conſideration; as for this year of 63. or 7. times 9. though ſome eſteeme it of moſt danger, yet do I conceive it leſſe dangerous then the other; for though it containeth both numbers above named, that is, 7. and 9. yet neither of them ſquare or quadrate, and as it is different from them both, ſo is it not potent in either: Nor is this yeare remarkable in the death of many famous men. I finde indeed that Ariſtotle dyed this yeare, but hee by the vigour of his minde, a long time ſuſtained a naturall infirmitie of ſtomack, that it was a greater wonder he attained unto 63. then that he lived no longer: The Pſalme of Moſes hath mentioned a yeare of danger differing from all theſe: and that is ten times 7. or ſeventie; for ſo it is ſaid, The dayes of Man are threeſcore and ten; and the very ſame is affirmed by Solon, as Herodotus relates in a ſpeech of his unto Cræſus, *Ego annis ſeptuaginta humanæ vitæ modum definio:* and ſurely that yeare muſt be of greateſt danger, which is the Period of all the reſt, and feweſt ſafely paſſe thorow that, which is ſet as a bound for few or none to paſſe; and therefore the conſent of elder times, ſetling their conceits upon Climacters, not onely differing from this of ours, but on another, though ſeverall nations and ages do fancy unto themſelves different years of danger, yet every one expects the ſame event, and conſtant veritie in either.

Againe, though Varro divided the dayes of man into five portions, Hippocrates into 7. and Solon into ten; yet probably their diviſions were to be received with latitude, and their conſiderations not ſtrictly to be confined unto their laſt unities: So when Varro extendeth *Puericia* unto 15. *Adoleſcentia* unto 30. *Iuventus* unto 35. there is a large latitude

latitude betweene the termes or Periods of compute, and the veritie holds good in the accidents of any yeeres betweene them: So when Hippocrates divideth our life into 7. degrees or ſtages, and maketh the end of the firſt 7. of the ſecond 14. of the third 28. of the fourth 35. of the fift 47. of the ſixt 56. and of the ſeventh, the laſt yeare when ever it happeneth; herein we may obſerve he maketh not his diviſions preciſely by 7. and 9. and omits the great Climacterickall; beſide there is between every one at leaſt the latitude of 7. yeares, in which ſpace or interval, that is either in the third or fourth yeere, what ever falleth out is equally verified of the whole degree, as though it had happened in the ſeventh. Solon divided it into ten Septenaries, becauſe in every one thereof, a man received ſome ſenſible mutation, in the firſt is Dedentition or falling of teeth: in the ſecond Pubeſcence, in the third the beard groweth, in the fourth ſtrength prevailes, in the fift maturitie for iſſue; in the ſixth Moderation of appetite, in the ſeventh Prudence, &c. Now herein there is a tolerable latitude, and though the diviſion proceed by 7 yet is not the totall veritie to be reſtrained unto the laſt year, nor conſtantly to be expected the beard ſhould be compleat at 21. or wiſedome acquired juſt in 49. and thus alſo though 7. times 9. containe one of thoſe ſeptenaries, and doth alſo happen in our declining yeares, yet might the events thereof be imputed unto the whole ſeptenarie; and be more reaſonably entertained with ſome latitude, then ſtrictly reduced unto the laſt number, or all the accidents from 56. imputed unto 63.

Thirdly, although this opinion may ſeeme confirmed by obſervation, and men may ſay it hath been ſo obſerved, yet we ſpeake alſo upon experience, and doe beleeve that men from obſervation will collect no ſatisfaction: that other yeares may be taken againſt it, eſpecially if they have the advantage to precede it; as ſixty againe 63. and 63. again 66. for fewer attaine to the latter then the former; and ſo ſurely in the firſt ſeptenarie doe moſt die, and probably alſo in the very firſt yeare, for all that ever lived were in the account of that yeare; beſide the infirmities that attend it are ſo many, and the body that receives them ſo confirmed, we ſcarce count any alive that is not paſt it.

Franciſcus Paduanius in his worke *De catena temporis*, diſcourſing of the great Climacterickall, attempts a numeration of eminent men, who dyed in that yeare; but in ſo ſmall a number, as not ſufficient to make a conſiderable Induction; he mentioneth but foure, Diogenes Cynicus, Dionyſius Heracleoticus, Xenocrates Platonicus, and Plato: as for Dionyſius, as Cenſorinus witneſſeth, hee famiſhed himſelfe in the 82. yeare of his life; Xenocrates by the teſtimony of Laertius fell into a cauldron, and dyed the ſame yeare; and Diogenes the Cynicke by the ſame teſtimony lived almoſt unto ninetie: The date of Platoes death is not exactly agreed on, but all diſſent from this

this which he determineth; Neanthes in Laertius extendeth his dayes unto 84. Suidas unto 82. but Hermippus defineth his death in 81. and this account seemeth most exact; for if, as hee delivereth, Plato was borne in the 88. Olympiade, and dyed in the first yeare of the 108. the account will not surpasse the year of 81. and so in his death he verified the opinion of his life, and of the life of man, whose Period, as Censorinus recordeth, he placed in the Quadrate of 9. or 9. times 9. that is, 81. and therefore as Seneca delivereth, the Magicians at Athens did sacrifice unto him, as declaring in his death somewhat above humanity, because he dyed in the day of his nativity, and without deduction justly accomplished the year of eighty one. Bodine I confesse delivers a larger list of men that died in this yeare, whose words in his methode of History are these, *Moriuntur innumerabiles anno sexagesimotertio*, Aristoteles, Chrysippus, Bocatius, Bernardus, Erasmus, Lutherus, Melancthon, Sylvius, Alexander, Jacobus Sturmius, Nicolaus Cusanus, Thomas Linacer, *eodem anno Cicero cæsus est*: wherein beside that it were no difficult point to make a larger Catalogue of memorable persons that dyed in other yeares, wee cannot but doubt the verity of his Induction: as for Silvius and Alexander, which of that name he meaneth I know not; but for Chrysippus by the testimony of Laertius, hee dyed in the 73. year, Bocatius in the 62. Linacer the 64. and Erasmus exceeded 70. as Paulus Jovius hath delivered in his Elogie of learned men; and as for Cicero, as Plutarch in his life affirmeth, he was slain in the year of 64. and therefore sure the question is hard set, and we have no easie reason to doubt, when great and entire Authors shall introduce injustifiable examples, and authorize their assertions by what is not authenticall.

Fourthly, they which proceed upon strict numerations, and will by such regular and determined wayes measure out the lives of men, and periodically define the alterations of their tempers; conceive a regularity in mutations, with an equalitie in constitutions, and forget that variety which Physitians therein discover: For seeing we affirm that women doe naturally grow old before men, that the cholerick fall short in longævitie of the sanguine, that there is *senium ante senectutem*, and many grow old before they arive at age; we cannot so reasonably affixe unto them all one common point of danger, but should rather assigne a respective fatality unto each: which is concordant unto the doctrine of the numerists, and such as maintaine this opinion: for they affirme that one number respecteth men, another women, as Bodin explaining that of Seneca, *Septimus quisq; annus etati signum imprimit* subjoynes, *hoc de maribus dictum oportuit hoc primum intueri licet perfectum numerum, id est sextum fœminas septenarium mores immutare.*

Fiftly, since we esteeme this opinion to have some ground in nature, and that nine times seven revolutions of the Sunne, imprints a dange-

rous Character on ſuch as arive unto it; it will leave ſome doubt behinde, in what ſubjection hereunto were the lives of our forefathers preſently after the flood, and more eſpecially before it, who attaining unto 8. or 900. yeares, had not their Climacters computable by digits, or as we doe account them; for the great Climacterical was paſt unto them before they begat children, or gave any Teſtimony of their virilitie; for we read not that any begat children before the age of ſixtie five, and this may alſo afford a hint to enquire, what are the Climacters of other animated creatures, whereof the lives of ſome attaine not ſo farre as this of ours, and that of others extends a conſiderable ſpace beyond.

Laſtly, the imperfect accounts that men have kept of time, and the difference thereof both in the ſame and divers common wealths, will much diſtract the certainty of this aſſertion; for though there were a fatality in this yeare, yet divers were, and others might bee out in their account, aberring ſeverall wayes from the true and juſt compute, and calling that one yeare, which perhaps might be another.

For firſt they might be out in the commencement or beginning of their accoũt, for every man is many moneths elder then he computeth; for although we begin the ſame from our nativitie, and conceive that no arbitrary, but naturall terme of compute, yet for the duration of life, or exiſtence, wee participate in the wombe the uſuall diſtinctions of time, and are not to bee exempted from the account of age and life, where we are ſubject to diſeaſes, and often ſuffer death; and therefore Pythagoras, Hippocrates, Diocles, Avicenna and others, have ſet upon us, numerall relations and temporall conſiderations in the wombe; not only affirming the birth of the ſeventh moneth to be vitall, that of the eighth mortall, but the progreſſion thereto to be meaſured by rule, and to hold a proportion unto motion and formation; as what receiveth motion in the ſeventh, is perfected in the Triplicities; that is the time of conformation unto motion is double, and that from motion unto the birth, treble; So what is formed the 35. day is moved the ſeaventy, and borne the 210. day; and therefore if any inviſible cauſalitie there be, that after ſo many yeares doth evidence it ſelfe at 63. it will be queſtionable whether its activitie onely ſet out at our nativitie, and begin not rather in the womb, wherein we place the like conſiderations, which doth not only entangle this aſſertion, but hath already embroiled the endeavours of Aſtrology in the erection of Schemes, and the judgement of death, or diſeaſes; for being not incontroulably determined, at what time to begin, whether at conception, animation, or excluſion, (it being indifferent unto the influence of heaven to begin at either) they have invented another way, that is, to beginne *ab Horâ quæſtionis*, as Haly, Meſſahallach, Ganivetus, and Guido Bonatus have delivered.

Againe,

Againe, in regard of the measure of time by months and years, there will be no small difficulty, and if we shall strictly consider it, many have been and still may bee mistaken; for neither the motion of the Moone, whereby months are computed, nor of the Sunne whereby yeares are accounted consisteth of whole numbers, but admits of fractions, and broken parts, as we have declared of the Moone. That of the Sunne consisteth of 365. dayes, and almost 6 houres; that is wanting eleven minutes; which 6 houres omitted, or not taken notice of, will in processe of time largely deprave the compute; and this is the occasion of the Bissextile or leap-yeare, which was not observed in all times, nor punctually in all Common-wealths; so that in 63. yeares there may be lost almost 18. dayes, omitting the intercalation of one day every fourth yeare, allowed for this quadrant, or 6 houres supernumerary: and though the same were observed, yet to speake strictly a man may be somewhat out in the account of his age at 63. for although every fourth yeare we insert one day, and so fetch up the quadrant, yet those eleven minutes whereby the yeare comes short of perfect 6 houres, will in the circuit of those yeares arise unto certaine houres, and in a larger progression of time unto certaine dayes, whereof at present wee finde experience in the Calender we observe; for the Julian yeare of 365. dayes being eleven minutes larger then the annuall revolution of the Sunne, there will arise an anticipation in the Æquinoxes, and as Junctinus computeth in every 136. yeare they will anticipate almost one day; and therefore those ancient men and Nestors of old times, which yearly observed their nativities, might be mistaken in the day; nor that to be construed without a graine of Salt; which is delivered by Moses in the Booke of Exodus, At the end of foure hundred yeares, even the selfe same day, all the hoast of Israell went out of the land of Ægypt; for in that space of time the Equinoxes had anticipated, and the eleven minutes had amounted far above a day; and this compute rightly considered will fall fouler on them who cast up the lives of Kingdomes, and summe up their duration by particular numbers as Plato first began, and some have endeavoured since by perfect and sphericall numbers by the square and cube of 7 and 9 and 12, the great number of Plato: wherein indeed Bodine hath attempted a particular enumeration, whereby notwithstanding beside the mistakes committible in the solary compute of yeares, the difference of Chronologie disturbes the satisfaction and quiet of his computes, some adding, others detracting, and few punctually according in any one yeare, whereby indeed such accounts should be made up, for the variation in one unity destroyes the totall illation.

Thirdly, the compute may be unjust not only in a strict acception, or few dayes or houres, but in the latitude also of some yeares, and this may happen from the different compute of yeares in divers Nations,

and even such as did maintaine the most probable way of account, their yeare being not only different from one another, but the civill and common account disagreeing much from the naturall yeare, whereon the consideration is founded: Thus from the testimony of Herodotus, Censorinus and others, the Greeks observed the Lunary yeare, that is, twelve revolutions of the Moone 354. dayes, but the Ægyptians, and many others adhered unto the Solary account, that is, 365. dayes, that is eleven dayes longer; now hereby the account of the one would very much exceed the other: A man in the one would account himselfe 63. when one in the other would thinke himselfe but 61. and so although their nativities were under the same houre, yet did they at different yeares believe the verity of that which both esteemed affixed and certaine unto one: The like mistake there is in a tradition of our dayes; men conceiving a peculiar danger in the beginning dayes of May, which are set out as a fatall period unto consumptions and Cronicall diseases; wherein notwithstanding we compute by Calenders, not only different from our ancestors, but one another, the compute of the one anticipating that of the other; so that while wee are in Aprill, others begin May, and the danger is past unto one, while it beginneth with another.

Fourthly, men were not only out in the number of some dayes, the latitude of a few yeares, but might be wide by whole Olympiades and divers Decades of yeares; for as Censorinus relateth, the ancient Arcadians observed a yeare of three months, the Carians of six, the Iberians of foure; and as Diodorus and Xenophon, *de Æquivocis* alleadgeth, the ancient Ægyptians have used a yeare of three, two, and one month, so that the Climactericall was not only different unto those Nations, but unreasonably distant from ours; for 63. will passe in their account, before they arive so high as ten in ours.

Nor if we survey the account of Rome it selfe, may we doubt they were mistaken, and if they feared climactericall yeares might erre in their numeration; for the civill yeare whereof the people took notice, did sometime come short, and sometimes exceed the naturall; for as it appeares by Varro, Suetonius, and Censorinus, their yeare consisted first of ten months which comprehended but 304. dayes, that is 61. lesse then ours containeth; after by Numa or Tarquine from a superstitious conceit of impariety were added 51. dayes, which made 355. one day more then twelve revolutions of the Moone; and thus a long time it continued, the civill compute exceeding the naturall; the correction whereof, and the due ordering of the leap-yeare was referred unto the Pontifices, who either upon favour or malice, that some might continue their offices a longer or shorter time, or from the magnitude of the yeare that men might bee advantaged or endamaged in their contracts, by arbitrary intercalations they depraved the whole account;

account; of this abuſe Cicero accuſed Verres, which at laſt proceeded ſo farre that when Julius Cæſar came unto that office before the redreſſe hereof he was faine to inſert two intercalary months unto November and December, when he had already inſerted 23. dayes unto February; ſo that that year conſiſted of 445. dayes; a quarter of a year longer then that we obſerve, and though at the laſt the year was reformed, yet in the meane time they might be out, wherein notwithſtanding they ſummed up Climacterical obſervations.

Laſtly, one way more there may be of miſtake, and that not unuſuall among us, grounded upon a double compute of the yeare; the one beginning from the 25. of March, the other from the day of our birth unto the ſame againe, which is the naturall account: Now hereupon many men doe frequently miſcaſt their dayes; for in their age they diduce the account not from the day of their birth, but the yeare of our Lord, wherein they were borne; ſo a man that was borne in January, 1582. if hee live to fall ſicke in the latter end of March, 2645. will ſumme up his age, and ſay I am now 63. and in my Climacterical and dangerous yeare, for I was borne in the yeare 1582. and now it is 1645. whereas indeed he wanteth many months of that yeare, conſidering the true and naturall account unto his birth, and accounteth two months for a year: and though the length of time and accumulation of yeares doe render the miſtake inſenſible, yet is it all one, as if one borne in January 1644. ſhould be accounted a yeare old the 25. of March, 1645.

All which perpended, it may be eaſily perceived with what inſecurity of truth we adhere unto this opinion, aſcribing not only effects depending on the naturall period of time unto arbitrary calculations, and ſuch as vary at pleaſure, but confirming our tenents by the uncertaine account of others and our ſelves; there being no poſitive or indiſputeable ground where to begin our compute, that if there were, men might and have been ſeverall wayes miſtaken, the beſt in ſome latitude, others in greater, according to the different compute of divers ſtates, the ſhort and irreconcilable yeares of ſome, the exceeding error in the naturall frame of others, and the lapſes and falſe deductions of ordinary accountants in moſt.

Chap. XIII.

Of the Canicular or Dogdayes.

WHereof to ſpeake diſtinctly: among the Southerne Conſtellations two there are which beare the name of the Dog; the one in 16. degrees of latitude, containing on the left thigh a Star of the firſt magnitude, uſually called Procyon or Anticanis, becauſe ſay ſome it riſeth

Iam Procyon fuerit & vesani Leonis.

riseth before the other; which if truly understood, must be restrained unto those habitations, who have elevation of pole above thirty two degrees; mention thereof there is in Horace, who seemes to mistake or confound the one with the other; and after him in Galen, who is willing the remarkablest starre of the other should be called by this name, because it is the first that ariseth in the constellation; which notwithstanding, to speake strictly, it is not, unlesse we except one of the third magnitude in the right paw in his owne and our elevation, and two more on his head in and beyond the degree of sixty; it is also called *Canis minor*, though not *canicula*, by which diminitive is meant the greater Dog-star: A second and more considerable one there is, and neighbour unto the other in 40. degrees of Latitude, containing 18. starres, whereof that in his mouth of the first magnitude the Greeks call Σειριος, the Latines *Canis major*, and wee emphatically the Dog-Starre.

Now from the rising of this starre not cosmically, that is with the Sun, but Heliacally, that is, its emersion from the rayes of the Sunne, the Ancients computed their canicular dayes; concerning which there generally passeth an opinion, that during those dayes, all medication or use of Physick is to be declined, and the cure committed unto Nature, and therefore as though there were any feriation in nature or justitiums imaginable in professions, whose subject is naturall, and under no intermissive, but constant way of mutation; this season is commonly termed the Physitians vacation, and stands so received by most men: which conceit however generall, is not onely erroneous, but unnaturall, and subsisting upon foundations either false, uncertaine, mistaken, or misapplied, deserves not of mankinde that indubitable assent it findeth.

For first, which seemes to be the ground of this assertion, and not to be drawne into question, that is, the magnified quality of this Starre conceived to cause or intend the heat of this season, whereby these dayes become more observable then the rest, we finde that wiser Antiquity was not of this opinion, which seven hundred yeares agoe was as a vulgar error rejected by Geminus, a learned Mathematician in his Elements of Astronomy; wherein he plainly affirmeth, that common opinion made that a cause, which was at first observed but as a sign. The rising & setting both of this Star & others being observed by the Ancients, to denote & testifie certain points of mutation, rather then conceived to induce or effect the same; For our forefathers, saith he, observing the course of the Sun, and marking certaine mutations to happen in his progresse through particular parts of the Zodiack, they registred and set them downe in their Parapegmes, that is, certaine Astronomicall Canons, as Rhodiginus out of Vitruvius interprets it; and being not able to designe these times by dayes, months, or yeares, (the compute thereof

thereof, and the beginning of the yeare being different, according unto different Nations) they thought beſt to ſettle a generall account unto all, and to determine theſe alterations by ſome known and invariable ſignes; and ſuch did they conceave the riſing and ſetting of the fixed Stars; not aſcribing thereto any part of cauſality, but notice and ſignification; and thus much ſeemes implyed in that expreſſion of Homer, when ſpeakeing of the Dog-ſtar, he concludeth——κακὸν δὲ τε σῆμα πέλυται, *Malum autem ſignum eſt*; the ſame as Petavius obſerveth, is implyed in the word of Ptolomy, and the Ancients, περὶ ἐπισημασιῶν, that is, of the ſignification of ſtarres. The terme of Scripture alſo favours it, as that of Iſaiah, *Nolite timere à ſignis cœli*, and that in Geneſis, *Vt ſint in ſigna & tempora*: Let there be lights in the firmament, and let them be for ſignes and for ſeaſons.

But if all were ſilent, Galen hath explained this point unto the life, who expounding the reaſon why Hippocrates declared the affections of the yeare by the riſing and ſetting of ſtars, it was ſaith he, becauſe he would proceed on ſignes and principles beſt knowne unto all Nations; and upon his words, in the firſt of the Epidemicks, *In Thaſo Autumno circa Equinoxium & ſubvirgilias pluviæ erant multæ*, he thus enlargeth: If (ſaith he) the ſame compute of times and months were obſerved by all Nations, Hippocrates had never made any mention either of Arcturus, Pleiades, or the Dog-ſtar, but would have plainely ſaid, In Macedonia, in the month Dion, thus or thus was the ayre diſpoſed; but for as much as the month Dion is onely knowne unto the Macedonians, but obſcure unto the Athenians, and other Nations, he found more generall diſtinctions of time, and inſtead of naming months, would uſually ſay, at the Æquinox, the riſing of the Pleiades, or the Dog-ſtar: And by this way did the Ancients devide the ſeaſons of the yeare, the Autumne, Winter, Spring, and Summer, by the riſing of the Pleiades, denoting the beginning of Summer, and by that of the Dog-ſtar, the declination thereof; by this way Ariſtotle through all his bookes of Animals, diſtinguiſheth their times of generation, Latitancy, migration, ſanity and venation; and this were an allowable and generall way of compute, and ſtill to be retained, were the ſite of the ſtars as inalterable, and their aſcents as invariable as primitive Aſtronomy conceaved them: And therefore though Ariſtotle frequently mentioneth this ſtarre, and particularly affirmeth that fiſhes in the Boſphorus are beſt to be catched from the ariſe of the Dog-ſtarre, muſt we conceave the ſame a meere effect thereof? Nor though Scaliger from hence be willing to inferre the efficacy of this ſtarre, are wee induced hereto; except becauſe the ſame Philoſopher affirmeth; that Tunny is fat about the riſing of the Pleiades, and departs upon Arcturus, or that moſt inſects are latent, from the ſetting of the ſtarres; except, I ſay, he give us alſo leave to inferre that theſe particular effects

and

and alterations proceed from thoſe ſtars, which were indeed but deſignations of ſuch quarters and portions of the yeare, wherein the ſame were obſerved: Now what Pliny affirmeth of the Orix, that it ſeemeth to adore this ſtar, and taketh notice thereof by voyce and ſternutation, untill wee be better aſſured of its verity, wee ſhall not ſalve the ſympathy.

Secondly, what ſlender opinion the Ancients held of the efficacy of this ſtarre is declarable from their compute; for as Geminus affirmeth, and Petavius his learned Comment proveth, they began their account from its Heliacall emerſion, and not its coſmicall aſcent; The coſmicall aſcenſion of a ſtarre we terme that, when it ariſeth together with the Sun, or the ſame degree of the Ecliptick wherein the Sun abideth: and that the Heliacall, when a ſtarre which before for the vicinity of the Sun was not viſible, being further removed beginneth to appeare: for the annuall motion of the Sun from Weſt to Eaſt being far ſwifter then that of the fixed ſtars, he muſt of neceſſity leave them on the Eaſt whilſt he haſtneth forward, and obſcureth others to the Weſt: and ſo the Moone who performes its motion ſwifter then the Sun, (as may be obſerved in their Conjunctions and Eclipſes) gets Eaſtward out of his rayes, and appeares when the Sun is ſet; if therefore the Dog-ſtar had this effectuall heat which is aſcribed unto it, it would afford beſt evidence thereof, and the ſeaſon would be moſt fervent, when it ariſeth in the probableſt place of its activity, that is, the coſmicall aſcent, for therein it ariſeth with the Sun, and is included in the ſame irradiation: but the time obſerved by the Ancients was long after this aſcent, and in the Heliacall emerſion, when it becomes at greateſt diſtance from the Sun, neither riſing with it nor neere it; and therefore, had they conceived any more then a bare ſignality in this Star, or aſcribed the heat of the ſeaſon thereunto, they would not have computed from its Heliacall aſcent which was of inferiour efficacy, nor imputed the vehemency of heat unto thoſe points wherein it was more remiſſe, and where with leſſe probability they might make out its action.

Thirdly, although we derive the authority of theſe dayes from obſervations of the Ancients, yet are our computes very different, and ſuch as confirme not each other, for whereas they obſerved it Heliacally, we obſerve it Coſmically; for before it ariſeth Heliacally unto our latitude, the Summer is even at an end: Againe, we compute not onely from different aſcents, but alſo from divers ſtarres; they from the greater Dog-ſtar, we from the leſſer; they from Orions, we from Cephalus his dog; they from Seirius, we from Procyon: for the beginning of the Dog-dayes with us is ſet downe the 19. of July, at which time the leſſer Dog-ſtar ariſeth with the Sun, whereas the ſtarre of the greater Dog aſcendeth not untill about the 31. of July, in the 18. degree of Leo; and the joynt compute by both is onely juſtifiable in the

latitude

latitude of 30. degrees where both theſe ſtarres ariſe together. So that their obſervations confirme not ours, nor ours theirs, but rather confute each other, computing from different foundations, and tranſlating at pleaſure the effects and power of one ſtarre unto another.

Fourthly, (which is the Argument of Gemînus) were there any ſuch effectuall heat in this ſtarre, yet could it but weakly evidence the ſame in Summer, it being about 40. degrees diſtant from the Sun, and ſhould rather manifeſt its warming power in the winter, when it remaines conjoyned with the Sun in its Hybernall converſion; for about the 29. of October, and in the 16. of Scorpius, and ſo againe in January the Sunne performes his revolution in the ſame parallell with the Dogge-ſtarre; Againe, if wee ſhould impute the heat of this ſeaſon, unto the cooperation of any ſtarres with the Sunne, it ſeemes more favourable for our times, to aſcribe the ſame unto the conſtellation of Leo; where beſides that the Sunne is in his proper houſe, it is conjoined with many ſtarres, whereof two of the firſt magnitude, and in the 8th of Auguſt is corporally conjoyned with Baſiliſcus, a ſtarre of eminent name in Aſtrologie, and ſeated in the very Eclipticke.

Fifthly, if all were granted, that obſervation and reaſon were alſo for it, and were it an undeniable truth that an effectuall fervour proceeded from this ſtarre; yet would not the ſame determine the opinion now in queſtion, it neceſſarily ſuffering ſuch reſtrictions as take of generall illations; for firſt in regard of different latitudes unto ſome, the canicular dayes are in the winter, as unto ſuch as have no latitude, but live in a right Sphere that is under the Æquinoctiall line; for unto them it ariſeth with the Sunne about the Tropicke of Cancer, which ſeaſon unto them is winter, and the Sunne remoteſt from them: nor hath the ſame poſition in the ſummer, that is, in the Æquinoctiall points any advantage from it; for in the one point the Sunne is at the Meridian, before the Dogge-ſtarre ariſeth, in the other the ſtarre is at the Meridian before the Sunne aſcendeth.

Some latitudes have no canicular dayes at all; as namely all thoſe which have more then 73. degrees of northerne Elevation, as the territory of *Nova Zembla*, part of Greenland and Tartarie; for unto that habitation the Dogge-ſtarre is inviſible, and appeareth not above the Horizon.

Unto ſuch Latitudes as it ariſeth, it carrieth a various and a very different reſpect; unto ſome it aſcendeth when Summer is over, whether we compute Heliacally or Coſmically; for though unto Alexandria it ariſeth in Cancer, it ariſeth not unto Biarmia Coſmically before it bee in Virgo, and Heliacally about the Autumnall æquinox; even unto the Latitude of 52. the efficacy thereof is not much conſiderable, whether we conſider its aſcent, Meridian altitude, or abode above the Horizon; for it ariſeth very late in the yeere, about the eigh-

teenth of Leo, that is, the 31. of Iuly; Of Meridian Altitude it hath but 23. degrees, so that it playes but obliquely upon us, and as the Sun doth about the 23. of January, and lastly his abode above the Horizon is not great; for in the eighteenth of Leo, the 31. of Iuly, although they arise together, yet doth it set above 5. houres before the Sun, that is, before two of the clock, after which time we are more sensible of heat, then all the day before.

Scondly, in regard of the variation of the longitude of the starres, we are to consider (what the Ancients observed not) that the site of the fixed starres is alterable, and that since elder times they have suffered a large and considerable variation of their longitudes; the longitude of a starre to speake plainly, is its distance from the first point of numeration toward the East, which first point unto the Ancients was the vernall æquinox; Now by reason of their motion from West to East, they have very much varied from this point: The first starre of Aries in the time of Meton the Athenian was placed in the very intersection, which is now elongated and removed Eastward 28. degrees; insomuch that now the signe of Aries possesseth the place of Taurus, and Taurus that of Gemini; which variation of longitude must very much distract the opinion of the Dogge-starre, not onely in our dayes, but in times before and after; for since the world began it hath arisen in Taurus, and before it end may have its ascent in Virgo; so that wee must place the canicular dayes, that is the hottest time of the year in the spring in the first Age, and in the Autumne in the ages to come.

Thirdly, the starres have not onely varied their longitudes, whereby their ascents have altered; but have also changed their declinations, whereby their rising at all, that is, their appearing hath varied. The longitude of a starre wee call its shortest distance from the Æquator. Now though the poles of the world and the Æquator be immoveable, yet because the starres in their proper motions, from West to East doe move upon the poles of the Eclipticke distant 23. degrees and an half from the poles of the Æquator, and describe circles parallell not unto the Æquator, but the Eclipticke, they must be therfore sometimes nearer, sometimes removed further from the Æquator: All starres that have their distance from the Eclipticke Northward not more then 23. degrees and an halfe, which is the greatest distance of the Eclipticke from the Æquator, may in progression of time have declination Southward, and move beyond the Æquator: but if any starre hath just this distance of 23. and an halfe, as hath Cappella on the backe of Erichonius, it may hereafter move under the Æquinoctiall, and the same will happen respectively unto starres which have declination Southward: and therefore many starres may be visible in our Hemisphere, which are not so at present, and many which are at present, shall take leave of our Horizon, and appeare unto Southerne habitations; and therefore the

the time may come that the Dogge-ſtarre may not be viſible in our Horizon, and the time hath beene, when it hath not ſhewed it ſelfe unto our neighbour-latitudes; ſo that canicular dayes there have beene none nor ſhall be; yet certainely in all times ſome ſeaſon of the yeare more notable hot then other.

Laſtly, wee multiply cauſes in vaine, for the reaſon hereof wee need not have recourſe unto any ſtarre but the Sunne and the continuitie of its action: For the Sunne aſcending into the Northerne ſignes, begetteth firſt a temperate heat in the ayre, which by his approach unto the ſolſtice he intendeth, and by continuation increaſeth the ſame even upon declination; for running over the ſame degrees again, that is in Leo, which hee hath done in Taurus, in July which he did in May, he augmenteth the heat in the later which he began in the firſt, and eaſily intendeth the ſame by continuation which was well promoted before: So is it obſerved that they which dwell between the Tropicks and the Æquator, have their ſecond ſummer hotter and more maturative of fruits then the former: ſo we obſerve in the day (which is a ſhort yeer) the greateſt heat about two in the afternoone, when the Sunne is paſt the Meridian (which is his diurnall Solſtice) and the ſame is evident from the Thermometer or obſervations of the weather-glaſſe; ſo are the colds of the night ſharper in the ſummer about two or three after midnight, and the froſts in winter ſtronger about thoſe houres: ſo likewiſe in the yeare we obſerve the cold to augment, when the dayes begin to increaſe, though the Sunne be then aſcenſive, and returning from the winter Tropick, and therefore if wee reſt not in this reaſon for the heat in the declining part of ſummer, we muſt diſcover freezing ſtars that may reſolve the latter colds of winter, which who ever deſires to invent, let him ſtudie the ſtarres of Andromeda, or the nearer conſtellation of Pegaſus, which are about that time aſcendent.

It cannot therefore unto reaſonable conſtructions ſeeme ſtrange, or ſavour of ſingularity that we have examined this point, ſince the ſame hath beene already denyed by ſome, ſince the authoritie and obſervations of the Ancients rightly underſtood doe not confirme it, ſince our preſent computes are different from thoſe of the Ancients, whereon notwithſtanding they depend; ſince there is reaſon againſt it, and if all were granted, yet muſt it be maintained with manifold reſtraints, farre otherwiſe then is received; and laſtly ſince from plaine and naturall principles, the doubt may be fairely ſalved, and not clapt up from petitionary foundations and principles uneſtabliſhed.

But that which chiefly promoted the conſideration of theſe dayes, and medically advanced the ſame, was the doctrine of Hippocrates a Phyſition of ſuch repute, that he received a teſtimony from a Chriſtian, that might have beene given unto Chriſt: The firſt in his booke *de Aere, Aquis, & locis, Syderum ortus, &c.* That is, wee are to obſerve

Qui nec fallere poteſt nec falli.

the rising of Starres, especially the Dogge-starre, Arcturus, and the setting of the Pleiades or seven Starres; from whence notwithstanding wee cannot in generall inferre the efficacie of these Stars, or coefficacie particular in medications: probably expressing no more hereby then if hee should have plainely said, especiall notice wee are to take of the hottest time in Summer, of the beginning of Autumne and winter, for by the rising and setting of those starres were these times and seasons defined; and therefore subjoynes this reason, *Quoniam his temporibus morbi finiuntur*, because at these times diseases have their ends, as Physitions well know, and hee elsewhere affirmeth, that seasons determine diseases, beginning in their contraries, as the spring the diseases of Autumne, and the summer those of winter; now (what is very remarkable) whereas in the same place he adviseth to observe the times of notable mutations, as the Æquinoxes, and the Solstices, and to decline Medication tenne dayes before and after, how precisely soever canicular cautions be considered, this is not observed by Physitions, nor taken notice of by the people. And indeed should we blindly obey the restraints both of Physitions and Astrologers, we should contract the liberty of our prescriptions, and confine the utility of Physicke unto a very few dayes; for observing the Dogdayes, and as is expressed some dayes before, and likewise tenne dayes before, and after the Æquinoctiall and Solsticiall points, by this observation alone are exempted above an hundred dayes; whereunto if we adde the two Ægyptian dayes in every moneth, the interlunary and pleniluary exemptions, the Eclipses of Sunne and Moone, conjunctions and oppositions Planeticall, the houses of Planets, and the site of the Luminaries under the signes, (wherein some would induce a restraint of Purgation or Phlebotomy) there would arise aboue an hundred more; so that of the whole year the use of Physicke would not be secure much above a quarter; now as we doe not strictly observe these dayes, so need we not the other, and although consideration bee made hereof, yet might wee preserve the nearer Indications, before those which are drawn from the time of the year, or other cælestial relation.

The second Testimony is taken out of the last peece of his Age, and after the experience (as some thinke) of no lesse then an hundred years, and that is his booke of Aphorismes, or short and definitive determinations in Physicke; the Aphorisme alleadged is this, *sub Cane & ante Canem difficiles sunt purgationes*; *sub Cane & Anticane*, say some, including both the Dogstarres, but that cannot consist with the Greek ὑπὸ κυνὸς καὶ μετὰ κυνός, nor had that Criticisme been ever omitted by Galen; now how true this sentence was in the mouth of Hippocrates, and with what restraint it must be understood, will readily appeare from the difference between us in circumstantiall relations.

And first, concerning his time and Chronologie, he lived in the reigne

reigne of Artaxerxes Longimanus about the 82. Olympiade, 450. yeares before Christ, and from our times above two thousand. Now since that time (as we have already declared) the Starres have varied their longitudes, and having made large progressions from West to East, the time of the Dogstars ascent must also very much alter; for it ariseth later now in the yeare, then it formerly did in the same latitude, and far later unto us who have a greater elevation; for in the dayes of Hippocrates this Starre ascended in Cancer which now ariseth in Leo, and will in progression of time arise in Virgo; and therefore in regard of the time wherein he lived, the Aphorisme was more considerable in his dayes then it is to us, or unto his country in ours.

The place of his nativity was Coos, an Iland in the Myrtoan Sea, not far from Rhodes, described in Mappes by the name of Lango, and called by the Turkes who are masters thereof Stancora, according unto Ptolomie of Northerne latitude 36. degrees; that he lived and writ in these parts, is not improbably collected from the Epistles that passed betwixt him and Artaxerxes, as also between the Citizens of Abdera, and Coos, in the behalfe of Democritus; which place being seated from our latitude of 52, 16 degrees Southward, there will arise a different consideration, and we may much deceive our selves if we conforme the ascent of Starres in one place unto another, or conceive they arise the same day of the moneth in Coos and in England; for as Petavius computes in the first Julian yeare, at Alexandria of latitude 31. the Starre arose cosmically in the twelfe degree of Cancer, Heliacally the 26. by the compute of Geminus about this time at Rhodes of latitude 37. it ascended cosmically the 16 of Cancer, Heliacally the first of Leo; and about that time at Rome of latitude 42. cosmically the 22. of Cancer and Heliacally the first of Leo, for unto places of greater latitude it ariseth ever later, so that in some latitudes the cosmicall ascent happeneth not before the twentieth degree of Virgo, ten dayes before the Autumnall Æquinox, and if they compute Heliacally after it in Libra.

Againe, should we allow all, and only compute unto the latitude of Coos, yet would it not impose a totall omission of Physicke; for if in the hotteſt season of that clime, all Physicke were to be declined, then surely in many other, none were to be used at any time whatsoever; for unto many parts, not only in the Spring and Autumne, but also in the Winter the Sun is nearer, then unto the clime of Coos in the Summer.

The third consideration concerneth purging medicines, which are at present far different from those implyed in this Aphorisme, and such as were commonly used by Hippocrates; for three degrees wee make of purgative medicines: The first thereof is very benigne, nor far removed from the nature of Aliment, into which upon defect of working, it is oft times converted, and in this forme do we account Manna,

Cassia,

Cassia, Tamarindes and many more, whereof we finde no mention in Hippocrates: the second is also gentle, having a familiarity with some humor, into which it is but converted if it faile of its operation, of this sort are Aloe, Rhabarbe, Senna, &c. whereof also few or none were knowne unto Hippocrates: The third is of a violent and venemous quality, which frustrate of its action, assumes as it were the nature of poyson, such as are Scammoneum, Colocynthis, Elaterium, Euphorbium, Tithymallus, Laureola, Peplum, &c. of this sort it is manifest Hippocrates made use, even in Fevers, Pleurisies and Quinsies; and that composition is very remarkable which is ascribed unto Diogenes in Ætius, that is of Pepper, Sal Armoniac, Euphorbium, of each an ounce, the Dosis whereof foure scruples and an half, which whosoever should take, would finde in his bowells more then a canicular heat though in the depth of Winter; many of the like nature may be observed in Ætius Tetrab. 1. Serm. 3. or in the book *De Dinamidiis*, ascribed unto Galen, which is the same *verbatim* with the other.

Now in regard of the second, and especially the first degree of Purgatives, the Aphorisme is not of force, but we may safely use them, they being benigne and of innoxious qualities; and therefore Lucas Gauricus, who hath endeavoured with many testimonies to advance this consideration, at length concedeth that lenitive Physicke may bee used, especially when the Moone is well affected in Cancer or in the watery signes; but in regard of the third degree the Aphorisme is considerable; purgations may be dangerous, and a memorable example there is in the medicall Epistles of Crucius, of a Roman Prince that dyed upon an ounce of Diaphænicon, taken in this season; from the use whereof we refraine not only in hot seasons, but warily exhibit it at all times in hot diseases, which when necessity requires we can performe more safely then the Ancients, as having better wayes of preparation and correction; that is, not onely by addition of other bodyes, but separation of noxious parts from their own.

But beside these differences between Hippocrates and us, the Physitians of these times and those of Antiquity, the condition of the disease, and the intention of the Physitian, holds a maine consideration in what time and place soever: for Physicke is either curative or preventive; Preventive we call that which by purging noxious humors, and the causes of diseases preventeth sickneſse in the healthy, or the recourse thereof in the valetudinary; and this is of common use both at the Spring and Fall, and we commend not the same at this season: Therapeuticke or curative Physicke, we tearm that which restoreth the Patient unto sanity, and taketh away diseases actually affecting; now of diseases some are cronicall and of long duration, as quartane Agues, Scurvy, &c. wherein becaus they admit of delay we deferre the cure to more advantagious seasons: others wee tearme acute, that is of short

ſhort duration and danger, as Fevers, Pleurifies, &c. in which, becauſe delay is dangerous, and they ariſe unto their ſtate before the Dog-dayes determine, we apply preſent remedies according unto Indications, reſpecting rather the acuteneſſe of the diſeaſe, and precipitancy of occaſion, then the riſing or ſetting of Stars, the effects of the one being diſputable, of the other aſſured and inevitable.

And although Aſtrologie may here put in, and plead the ſecret influence of this Starre; yet Galen I perceive in his Comment, makes no ſuch conſideration, confirming the truth of the Aphoriſme from the heat of the yeare, and the operation of Medicines exhibited; in regard that bodies being heated by the Summer, cannot ſo well endure the acrimony of purging Medicines, and becauſe upon purgations contrary motions enſue, the heat of the Ayre attracting the humours outward, and the action of the Medicine retracting the ſame inward: but theſe are readily ſalved in the diſtinctions before alleadged, and particularly in the conſtitution of our climate and divers others, wherein the Ayre makes no ſuch exhauſtion of ſpirits; and in the benignity of our Medicines, whereof ſome in their owne natures, others well prepared, agitate not the humours, or make a ſenſible perturbation.

Nor do we hereby reject or condemne a ſober and regulated Aſtrology; we hold there is more truth therein then in Aſtrologers, in ſome more then many allow, yet in none ſo much as ſome pretend; we deny not the influence of the Stars, but often ſuſpect the due application thereof; for though we ſhould affirme that all things were in all things, that heaven were but earth celeſtified, and earth but heaven terreſtrified, or that each part above had an influence upon its devided affinity below; yet how to ſingle out theſe relations, and duely to apply their actions is a worke oft times to be effected by ſome revelation, and Cabala from above, rather then any Philoſophy, or ſpeculation here below; what power ſoever they have upon our bodies, it is not requiſite they ſhould deſtroy our reaſons, that is, to make us rely on the ſtrength of Nature, when ſhe is leaſt able to relieve us, and when we conceive the heaven againſt us, to refuſe the aſſiſtance of the earth created for us; this were to ſuffer from the mouth of the Dog above, what others doe from the teeth of Dogs below; that is, to be afraid of their proper remedy, and refuſe to approach any water, though that hath often proved a cure unto their diſeaſe. There is in wiſe men a power beyond the ſtars; and Ptolomy encourageth us, that by fore-knowledge, wee may evade their actions; for, being but univerſall cauſes, they are determined by particular agents, which being inclined not conſtrained, containe within themſelves the caſting act, and a power to command the concluſion.

Upon the biting of a mad dog there enſues an hydrophobia or fear of water.

Laſtly, if all be conceded, and were there in this Aphoriſme an unreſtrained

restrained truth, yet were it not reasonable to inferre from a caution a non-usance or abolition, from a thing to bee used with discretion, not to be used at all; because the Apostle bids us beware of Philosophy, heads of extremity will have none at all; an usuall fallacie in vulgar and lesse distinctive braines, who having once overshot the mean, run violently on, and finde no rest but in the extreams.

And hereon we have the longer insisted, because the errour is materiall, and concernes oftimes the life of man: an errour to bee taken notice of by State, and provided against by Princes, who are of the opinion of Salomon, that their riches consist in the multitude of their Subjects: an errour worse then some reputed Heresies, and of greater danger to the body, then they unto the soul; which whosoever is able to reclaime, he shall save more in one Summer, then Themison destroyed in any Autumne; he shall introduce a new way of cure, preserving by Theorie, as well as practice, and men not onely from death, but from destroying themselves.

THE

THE FIFTH BOOK.

Of many things questionable as they are commonly described in Pictures.

Chap. I.

Of the picture of the Pelecan.

AND first in every place we meet with the picture of the Pelecan, opening her breast with her bill, and feeding her young ones with the bloud distilling from her: Thus is it set forth not onely in common signes, but in the Crest and Scucheon of many Noble families, hath been asserted by many holy Writers, and was an Hieroglyphicke of pietie and pittie among the Ægyptians, on which consideration, they spared them at their tables.

Notwithstanding upon enquirie we finde no mention hereof in Ancient Zoographers, and such as have particularly discoursed upon Animals, as Aristotle, Ælian, Plinie, Solinus and many more, who seldom forget proprieties of such a nature, and have beene very punctuall in lesse considerable Records: Some ground hereof I confesse wee may allow, nor need wee deny a remarkeable affection in Pelecans toward their young; for Ælian discoursing of Storkes, and their affection toward their brood whom they instruct to flie, and unto whom they redeliver up the provision of their bellies, concludeth at last, that Herons and Pelecans do the like.

As for the testimonies of ancient Fathers, and Ecclesiasticall writers, we may more safely conceive therein some Emblematicall then any reall Storie: so doth Eucherius confesse it to bee the Embleme of Christ; and wee are unwilling literally to receive that account of Jerome, that perceiving her young ones destroyed by Serpents, she openeth her side with her bill, by the blood whereof they revive and return unto life againe; by which relation they might indeed illustrate the de-

ſtruction of man by the old Serpent, and his reſtorement by the blood of Chriſt; and in this ſenſe we ſhall not diſpute the like relations of Auſtine, Iſidore, Albertus, and many more, and under an Emblematicall intention, we accept it in coat armour.

As for the Hieroglyphick of the Ægyptians, they erected the ſame upon another Story, that is, from earneſtly protecting her young, when her neſt was ſet on fire; for as for letting out her blood, it was not the aſſertion of the Egyptians, but ſeemes tranſlated unto the Pelecan from the Vulture, as Pierius hath moſt plainly delivered. *Sed quod Pelicanum (ut etiam alijs, pleriſq; perſuaſum eſt) roſtro pectus diſſecantem pingunt, ita ut ſuo ſanguine filios alat, ab Ægyptiorum hiſtoriâ valde alienum eſt, illi enim vulturem tantum id facere tradiderunt.*

And laſtly, as concerning the picture, if naturally examined, and not Hieroglyphically conceived, it containeth many improprieties, diſagreeing almoſt in all things from the true and proper deſcription: for firſt, whereas it is commonly ſet forth green or yellow, in its proper colour, it is inclining to white, excepting the extreamities or tops of the wing feathers, which are black: It is deſcribed in the bigneſſe of a Henne, whereas it approacheth and ſometimes exceedeth the magnitude of a Swanne; it is commonly painted with a ſhort bill, whereas that of the Pelecan attaineth ſometimes the length of two ſpannes. The bill is made acute or pointed at the end; whereas indeed it is flat and broad, and ſomewhat inverted at the extreame. It is diſcribed like fiſſipedes, or birdes which have their feet or clawes divided; whereas it is palmipedous, or fin-footed like Swannes and Geeſe, according to the Methode of nature, in latiroſtrous or flat bild birdes, which being generally ſwimmers, the organ is wiſely contriv'd unto the action, and they are framed with fins or oares upon their feet; and therefore they neither light, nor build on trees, if we except Cormorants, who make their neſts like Herons. Laſtly, there is one part omitted more remarkeable then any other, and that is the chowle or croppe adhering unto the lower ſide of the bill, and ſo deſcending by the throat; a bagge or ſachell very obſervable, and of capacity almoſt beyond credit; which notwithſtanding, this animall could not want; for therein (as Ariſtotle, Ælian, and Bellonius ſince averreth) it receiveth Oyſters, Cochles, Sckollops, and other teſtaceous animals, which being not able to breake, it retaines them untill they open, and vomitting them up, takes out the meat contained. This is that part preſerved for a rarity, and wherein (as Sanctius delivers) in one diſſected, a Negro childe was found.

Chap. II.

Of the picture of Dolphins.

THat Dolphins are crooked, is not onely affirmed by the hand of the Painter, but commonly conceived their naturall and proper figure; which is not onely the opinion of our times, but seemes the beliefe of elder times before us: for beside the expressions of Ovid and Pliny, their Pourtraicts in some ancient Coynes are framed in this figure, as will appeare in some thereof in Gesner, others in Goltsius, and Lævinus Hulsius in his description of Coynes, from Julius Cæsar unto Rhodulphus the second.

Notwithstanding, to speake strictly in their naturall figure they are straight, nor have they their spine connexed, or more considerably embowed, then Sharkes, Porposes, Whales, and other Cetaceous animalls, as Scaliger plainly affirmeth; *Corpus habet non magis curvum quam reliqui pisces*; as ocular enquiry informeth, and as unto such as have not had the opportunitie to behold them, their proper pourtraicts will discover in Rondeletius, Gesner, and Aldrovandus, and as indeed is deducible from pictures themselves; for though they be drawne repandous, or connexedly crooked in one piece, yet the Dolphin that carrieth Arion is concavously inverted, and hath its spine depressed in another.

And therefore what is delivered of their incurvitie, must either bee taken Emphatically, that is not really but in appearance; which happeneth, when they leap above water, and suddenly shoot downe againe; which is a fallacy in vision, whereby straight bodies in a sudden motion protruded obliquely downeward, appear unto the eye crooked, and this is the construction of Bellonius: or if it be taken really, it must not universally and perpetually, that is, not when they swimme and remaine in their proper figures, but onely when they leape, or impetuously whirle their bodies any way, and this is the opinion of Gesnerus. Or lastly, it must be taken neither really, nor Emphatically, but onely Emblematically; for being the Hyeroglyphick of celerity, and swifter then other animals, men best expressed their velocity by incurvity, and under some figure of a bowe, and in this sense probably doe Heralds also receive it, when from a Dolphin extended, they distinguish a Dolphin imbowed.

And thus also must that picture be taken of a Dolphin clasping an Anchor; that is not really, as is by most conceived out of affection unto man, conveighing the Anchor unto the ground, but Emblematically, according as Pierius hath expressed it, The swiftest animall conjoyned with that heavie body, implying that common morall, *Festina lente*, and that celerity should always be contempered with cunctation.

Chap. III.

Of the Picture of a Grashopper.

THere is also among us a common description and picture of a Grashopper, as may be observed in the pictures of Emblematists in the coats of severall families, and as the word *Cicada* is usually translated in Dictionaries; wherein to speake strictly, if by this word Grashopper, we understand that animall which is implied by τέττιξ with the Greeks, and by *Cicada* with the Latines, we may with safety affirme the Picture is widely mistaken, and that for ought enquiry can informe, there is no such insect in England, which how paradoxicall soever, upon a strict enquiry, will prove undeniable truth.

For first, that animall the French tearme *Santerelle*, we a Grashopper, and which under this name is commonly described by us, is named Ακρις by the Greekes, by the Latines *Locusta*, and by our selves in proper speech a Locust; as in the dyet of John Baptist, and in our Translation, Prov. 30. The Locusts have no King, yet goe they forth all of them by bands. Againe, between the *Cicada* and that wee call a Grashopper, the differences are very many, as may bee observed in themselves, or their descriptions in Mathiolus, Aldrovandus, and Muffetus: for first, they are differently cucullated or capuched upon the head and backe, and in the *Cicada* the eyes are more prominent; the Locusts have *Antennæ* or long hornes before, with a long falcation or forcipated tayle behinde, and being ordained for saltation, their hinder legs doe far exceed the other. The Locust or our Grashopper hath teeth, the *Cicada* none at all, nor any mouth according unto Aristotle, the *Cicada* is most upon trees; and lastly, the note or fritiniancy thereof is far more shrill then that of the Locust, and its life so short in Summer, that for provision it needs not recourse unto the providence of the Pismire in Winter.

And therefore where the *Cicada* must be understod, the pictures of Heralds and Emblematists are not exact, nor is it safe to adhere unto the interpretation of Dictionaries, and we must with candour make out our owne Translations: for in the plague of Ægypt, Exodus 10. the word Ακρις is translated a Locust, but in the same sense and subject, Wisdome 16. it is translated a Grashopper, For them the bitings of Grashoppers and flyes killed: whereas we have declared before the *Cicada* hath no teeth, but is conceived to live upon dew, and the possibility of its subsistence is disputed by Licetus. Hereof I perceive Muffetus hath taken notice, and dissenteth from Langius and Lycostenes, while they deliver, the cicada's destroyed the fruits in Germany, where indeed that insect is not found; and therefore concludeth, *Tam ipsos*

quam

quam alios deceptos fuisse autumo, dum locustas cicadas esse vulgari errore crederent.

And hereby there may be some mistake in the due dispensation of medicines desumed from this animall, particularly of Diatettigon commended by Ætius in the affections of the kidneys: It must be likewise understood with some restriction what hath been affirmed by Isidore, which is yet delivered by many, that Cicades are bred out of Cuccow spittle, or Woodseare; that is, that spumous frothy dew or exudation or both, found upon Plants, especially about the joynts of Lavender and Rosemary, and observable with us about the latter end of May; for here the true cicada is not bred, but certaine it is, that out of this, some kinde of locust doth proceed; for herein may be discovered a little insect of a festucine or pale green, resembling in all parts a Locust, or what we call a Grashopper.

Lastly, the word it selfe is improper, and the tearme of Grashopper not appliable unto the Cicada; for therein the organs of motion are not contrived for saltation, nor are the hinder legges of such extension, as is observable in salient animalls, and such as move by leaping; whereto the Locust is very well conformed; for therein the legs behinde are longer then all the body, and make at the second joynt acute angles, at a considerable advancement above their backs.

The mistake therefore with us might have its originall from a defect in our language; for having not the insect with us, we have not fallen upon its proper name, and so make use of a tearme common unto it and the Locust, whereas other countries have proper expressions for it; so the Italian calls it cicada, the Spaniard cigarra, and the French cigale; all which appellations conforme unto the originall, and properly expresse this animall.

Chap. IV.

Of the picture of the Serpent tempting Eve.

IN the picture of Paradice, and delusion of our first Parents, the Serpent is often described with humane visage, and not unlike unto Cadmus, or his wife, in the act of their Metamorphosis, which is not meerly a pictoriall contrivance or invention of the Painter, but an ancient tradition and conceived reallity, as it stands delivered by Beda and Authors of some Antiquity; that is, that Sathan appeared not unto Eve in the naked forme of a Serpent, but with a Virgins head, that thereby he might become more acceptable, and his temptation finde the easier entertaine; which nevertheless is a conceit not to bee admitted, and the plaine and received figure, is with better reason embraced.

For

For first, as Pierius observeth from Barcephas, the assumption of humane shape, had proved a disadvantage unto Sathan; affording not only a suspicious amazement in Eve, before the fact, in beholding a third humanity beside her self and Adam; but leaving some excuse unto the woman, which afterward the man tooke up with lesser reason; that is, to have been deceived by another like her selfe.

Againe, there was no inconvenience in the shape assumed; or any considerable impediment that might disturbe that performance in the common forme of a Serpent: for whereas it is conceived the woman must needs be afraid thereof, and rather flye then approach it, it was not agreeable unto the condition of Paradise and state of innocencie therein; if in that place as most determine, no creature was hurtfull or terrible unto man, and those destructive effects they now discover succeeded the curse, and came in with them is chiefe of thornes and briars; and therefore Eugubinus (who affirmeth this Serpent was a Basiliske) incurreth no absurdity, nor need we inferre that Eve should bee destroyed immediatly upon that Vision; for noxious animalls could offend them no more in the Garden, then Noah in the Arke: as they peaceably received their names, so they friendly possessed their natures: and were their conditions destructive unto each other, they were not so unto man, whose constitutions were antidotes, and needed not feare poysons, who had not incurred mortality. And if (as most conceive) there were but two created of every kinde, they could not at that time destroy either man or themselves; for this had frustrated the command of multiplication, destroyed a species, and imperfected the Creation: and therefore also if Cain were the first man borne, with him entred not only the act, but the first power of murther; for before that time neither could the Serpent nor Adam destroy Eve, nor Adam and Eve each other, for that had overthrowne the intention of the world, and put its Creator to act the sixt day over againe.

Moreover, whereas in regard of speech, and vocall conference with Eve, it may be thought he would rather assume an humane shape and organs, then the improper forme of a Serpent, it implyes no materiall impediment; nor need we to wonder how he contrived a voice out of the mouth of a Serpent, who hath done the like out of the belly of a Pythonissa, and the trunke of an Oake, as he did for many yeares at Dodona.

Lastly, whereas it might be conceived that an humane shape was fitter for this enterprise, it being more then probable she would be amazed to heare a Serpent speak; some conceive she might not yet be certaine that onely man was priviledged with speech, and being in the novity of the Creation, and inexperience of all things, might not bee affrighted to hear a Serpent speak: Beside she might be ignorant of their natures

natures who was not verſed in their names, as being not preſent at the generall ſurvey of Animalls, when Adam aſſigned unto every one a name concordant unto its nature; nor is this only my opinion, but the determination of Lombard and Toſtatus, and alſo the reply of Cyrill unto the objection of Julian, who compared this ſtory unto the fables of the Greekes.

Chap. V.

Of the Picture of Adam and Eve with Navells.

ANother miſtake there may be in the picture of our firſt Parents, who after the manner of their poſterity are both delineated with a Navell: and this is obſervable not only in ordinary and ſtayned peeces, but in the Authenticke draughts of Urbin, Angelo, and others; which notwithſtanding cannot be allowed, except we impute that unto the firſt cauſe, which we impoſe not on the ſecond, or what we deny unto nature, we impute unto Naturity it ſelfe; that is, that in the firſt and moſt accompliſhed peece, the Creator affected ſuperfluities, or ordained parts without all uſe or office.

For the uſe of the Navell is to continue the infant unto the Mother, and by the veſſells thereof to convey its aliment and ſuſtentation: the veſſells whereof it conſiſteth, are the umbilicall veyne, which is a branch of the Porta, and implanted in the liver of the Infant; two Arteries likewiſe ariſing from the Iliacall branches, by which the Infant receiveth the purer portion of bloud and ſpirits from the mother; and laſtly, the Urachos or ligamentall paſſage derived from the bottome of the bladder, whereby it diſchargeth the wateriſh and urinary part of its aliment: now upon the birth when the Infant forſaketh the wombe although it dilacerate, and breake the involving membranes, yet doe theſe veſſells hold, and by the mediation thereof the Infant is connected unto the wombe not only before, but a while alſo after the birth: theſe therefore the midwife cutteth off, contriving them into a knot cloſe unto the body of the Infant, from whence enſueth that tortuoſity or complicated nodoſity we uſually call the Navell, occaſioned by the colligation of veſſells before mentioned: now the Navell or veſſells whereof it is conſtituted, being a part precedent, and not ſubſervient unto generation, nativity, or parturition, it cannot be well imagined at the creation or extraordinary formation of Adam, who immediately iſſued from the Artifice of God; nor alſo that of Eve, who was not ſolemnly begotten, but ſuddenly framed, and anomalouſly proceeded from Adam.

And if we be led into concluſions that Adam had alſo this part, becauſe we behold the ſame in our ſelves, the inference is not reaſonable; for

for if we conceive the way of his formation, or of the first animalls did carry in all points a strict conformity unto succeeding productions, we might fall into imaginations that Adam was made without teeth, or that hee ran through those notable alterations in the vessells of the heart, which the Infant suffereth after birth: we need not dispute whether the egge or bird were first, and might conceive that dogges were created blind, because we observe they are littered so with us; which to affirm, is to confound, at least to regulate creation unto generation, the first acts of God, unto the second of Nature, which were determined in that generall indulgence, Encrease and multiply, produce or propagate each other; that is, not answerably in all points, but in a prolonged method according to seminall progression: for the formation of things at first was different from their generation after; and although it had no thing to precede, it was aptly contrived for that which should succeed it: and therefore though Adam were framed without this part, as having no other wombe then that of his proper principles, yet was not his posterity without the same: for the seminalty of his fabricke contained the power thereof, and was endued with the science of those parts whose predestinations upon succession it did accomplish.

All the Navell therefore and conjunctive part we can suppose in Adam, was his dependency on his Maker, and the connexion he must needs have unto heaven, who was the Son of God, for holding no dependence on any preceding efficient but God, in the act of his production there may bee conceived some connexion, and Adam to have been in a momentall Navell with his Maker: and although from his carnallity and corporall existence the conjunction seemeth no nearer then of causality and effect, yet in his immortall and diviner part hee seemed to hold a nearer coherence, and an umbilicality even with God himselfe: and so indeed although the propriety of this part bee found but in some animalls, and many species there are which have no navell at all; yet is there one linke and common connexion, one generall ligament, and necessary obligation of all whatever unto God; whereby although they act themselves at distance, and seem to be at loose, yet doe they hold a continuity with their Maker; which catenation or conserving union when ever his pleasure shall divide, let goe, or separate, they shall fall from their existence, essence, and operations; in briefe, they must retire unto their primitive nothing, and shrinke into their Chaos againe.

Chap. VI.

Of the Pictures of Easterne Nations, and the Jews at their feasts, especially our Saviour at the Passeover.

Concerning the pictures of the Jews, and Easterne Nations at their feasts, concerning the gesture of our Saviour at the Passeover, who

is usually described sitting upon a stoole or bench at a square table, in the middest of the twelve, many make great doubt; and though they concede a table jesture will hardly allow this usuall way of Session.

Wherein restrayning no mans enquiry, it will appeare that accubation, or lying downe at meales was a gesture used by very many nations. That the Parthians used it, is evident from Athenæus, who delivereth out of Possidonius, that their King lay downe at meales, on an higher bed then others. That Cleopatra thus entertained Anthonie, the same Author manifesteth when he saith, shee prepared twelve Triclinium. That it was in use among the Greeks, the word Triclinium implyeth, and the same is also declareable from many places in the Symposiacks of Plutarke. That it was not out of fashion in the dayes of Aristotle, hee declareth in his Politicks, when among the Institutionary rules of youth, he adviseth they might not be permitted to heare Iambicks and Tragedies before they were admitted unto discumbency or lying along with others at their meales. That the Romanes used this gesture at repast, beside many more is evident from Lipsius, Mercurialis, Salmasius, and Ciaconius who have expresly and distinctly treated hereof.

Now of their accumbing places, the one was called Stibadion and Sigma, carrying the figure of an halfe Moone, and of an uncertaine capacity, whereafter it received the name of Hexaclinon, Octoclinon, according unto that of Martial,

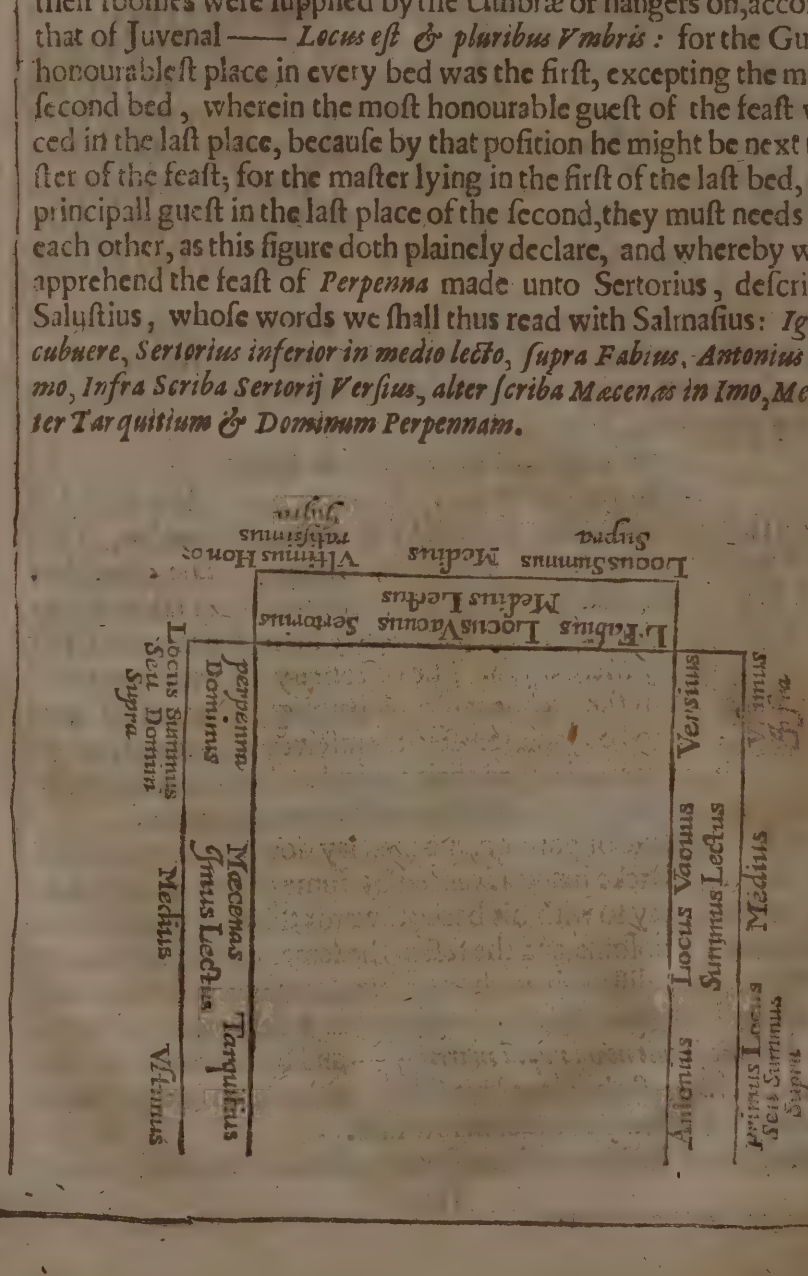
Accipe Lunata scriptum testudine Sigma
Octo capit, veniat quisquis amicus erit. Here at the left wing was the principall place, and the most honourable person, if hee were not master of the feast possessed that roome. The other was tearmed Triclinium, that is, Three beds encompassing a table, as may be seen in the figures thereof, and particularly in the Rhamnusian Triclinium, set down by Mercurialis. The customary use hereof was probably deduced from the frequent use of bathing, after which they commonly retired to bed, and refected themselves with repast; and so that custome by degrees changed their cubiculary beds into discubitory, and introduced a fashion to goe from the bathes unto these.

As for their gesture or position, the men lay downe leaning on their left elbow, their backe being advanced by some pillow or soft substance; the second lay so with his backe towards the first, that his head attained about his bosome; and the rest in the same order: For women, they sat sometimes distinctly with their sexe, sometime promiscuously with men, according to affection or favour, as is delivered by Juvenal ——— *Gremio jacuit nova nupta mariti* —— and by Suetonius of Caligula, that at his feasts he placed his sisters, with whom hee had beene incontinent, successively in order below him.

Againe, as their beds were three, so the guests did not usually exceed

that number in every one, according to the ancient Lawes, and proverbiall obſervations to begin with the Graces, and make up their feaſts with the Muſes: and therefore it was remarkable in the Emperour Lucius Verus, that he lay downe with twelve: which was, ſaith Julius Capitolinus, *præter exempla majorum*, not according to the cuſtome of his Predeceſſors, except it were at publick and nuptiall ſuppers.

Laſtly, for the diſpoſing and ordering of the perſons: The firſt and middle beds were for the gueſts, the third and loweſt for the maſter of the houſe & his family; he always lying in the firſt place of the laſt bed, that is next the middle bed; but if the wife or children were abſent, their roomes were ſupplied by the Umbræ or hangers on, according to that of Juvenal —— *Locus eſt & pluribus Vmbris:* for the Gueſts, the honourableſt place in every bed was the firſt, excepting the middle or ſecond bed, wherein the moſt honourable gueſt of the feaſt was placed in the laſt place, becauſe by that poſition he might be next the maſter of the feaſt; for the maſter lying in the firſt of the laſt bed, and the principall gueſt in the laſt place of the ſecond, they muſt needs be next each other, as this figure doth plainely declare, and whereby wee may apprehend the feaſt of *Perpenna* made unto Sertorius, deſcribed by Saluſtius, whoſe words we ſhall thus read with Salmaſius: *Igitur diſcubuere, Sertorius inferior in medio lecto, ſupra Fabius, Antonius in ſummo, Infra Scriba Sertorij Verſius, alter ſcriba Mæcenas in Imo, Medius inter Tarquitium & Dominum Perpennam.*



At

At this feast there were but seaven; the middle places of the highest and middle bed being vacant, and hereat was Sertorius the Generall and principall guest slaine; and so may wee make out what is delivered by Plutark in his life, that lying on his backe, and raysing himselfe up, Perpenna cast himself upon his stomack; which he might very well do being master of the feast, and lying next unto him, and thus also from this Tricliniarie disposure, we may illustrate that obscure expression of Seneca; That the Northwinde was in the middle, the North-East on the higher side, and the North-West on the lower; for as appeareth in the circle of the windes, the North-East will answer the bed of Antonius, and the North-West that of Perpenna.

That the custome of feasting upon beds was in use among the Hebrewes, many diduce from the 23. of Ezekiel. Thou satteſt upon a stately bed, and a table prepared before it. The custome of Discalceation or putting off their shoes at meales, is conceived by some to confirme the same; as by that meanes keeping their beds cleane, and therefore they had a peculiar charge to eate the Passeover with their shooes on, which Injunction were needlesse, if they used not to put them off.

That this discumbency at meales was in use in the dayes of our Saviour is conceived propable from severall speeches of his expressed in that phrase, even unto common Auditors, as Luke the 14. *Cum Invitatus fueris ad nuptias non discumbas in primo loco*, and besides many more, Matthew the 23. when reprehending the Scribes and Pharisees, hee saith, *Amant protoclisias id est primos recubitus in cœnis, & Protocathedrias sive primas cathedras in Synagogis:* wherein the tearms are very distinct, and by an Antithesis do plainly distinguish the posture of sitting, from this of lying on beds.

That they used this gesture at the Passeover, is more then probable from the testimony of Iewish writers, and particularly of Ben-maimon recorded by Scaliger *de emendatione temporum:* After the second cup according to the Institution, Exod. 12. The son asketh, what meaneth this service? Then he that maketh the declaration saith, How different is this night from all other nights? for all other nights wee wash but once, but this night twice; all other wee eat leavened or unleavened bread, but this onely leavened; all other we eat flesh roasted, boyled, or baked, but this only roasted; all other nights we eat together lying or sitting, but this only lying along; and this posture they used as a token of rest and security which they enioyed far different from that, at the eating of the Passeover in Ægypt.

That this gesture was used when our Saviour eate the Passeover, is not conceived improbable from the words whereby the Evangelists expresse the same, that is, ἀναπίπτειν, ἀνακεῖσθαι, κατακεῖσθαι, Ἀνακλιθῆναι, which termes do properly signifie this gesture in Aristotle, Athenæus,

Euripides, Sophocles, and all humane Authors; and the like we meete with in the paraphrasticall expression of Nonnus.

And thus may it properly be made out; what is delivered John 13. *Erat recumbens unus ex Discipulis ejus in sinu Iesu quem diligebat*; Now there was leaning on Jesus bosome one of his Disciples whom Jesus loved; which gesture will not so well agree unto the position of sitting, but is naturall, and cannot be avoyded in the Laws of accubation; and the very same expression is to be found in Pliny, concerning the Emperour Nerva and Veiento whom he favoured, *Cœnabat Nerva cum paucis, Veiento recumbebat propius atq; etiam in sinu*; and from this custome arose the word στηθιος, that is, a neere and bosome friend: and therefore Causabon justly rejecteth Theophylact, who not considering the ancient manner of decumbency, imputed this gesture of the beloved Disciple unto Rusticity, or an act of incivility; And thus also have some conceived; it may be more plainly made out what is delivered of Mary Magdalen, Luke 7. That she stood at Christs feet behinde him weeping, and began to wash his feet with teares, and did wipe them with the haires of her head; which actions, if our Saviour sate, she could not performe standing, and had rather stood behinde his back, then at his feet; and thus it cannot be reconciled what is observable in many pieces, and even of Raphaell Urbin, wherein Mary Magdalen is pictured before our Saviour, washing his feet on her knees, which will not consist with the strict description and letter of the Text.

Now whereas this position may seeme to be discountenanced by our Translation, which usually renders it sitting, it cannot have that illation; for the French and Italian translations expressing neither position of session or recubation, do onely say that he placed himselfe at the table, and when ours expresseth the same by sitting, it is in relation unto our custome, time, and apprehension; and the like upon occasion is not unusuall in our translation; so when it is said Luke 4. πτύξας τὸ βιβλίον, and the Vulgar renders it, *Cum plicasset librum*, ours translateth it, he shut or closed the booke, which is an expression proper unto the paginall books of our times, but not so agreeable unto volumes or rolling bookes in use among the Jews, not onely in elder times, but even unto this day. So when it is said, the Samaritan delivered unto the host two pence for the provision of the Levite; and when our Saviour agreed with the Labourers for a penny a day, in strict translation it should be seven pence halfe penny, and is not to be conceived our common penny, the sixtieth part of an ounce; for the word in the Originall is δηνάριον, in Latine, *Denarius*, and with the Romans did valew the eight part of an ounce, which after five shillings the ounce amounteth unto seven pence halfe penny of our money.

Lastly, whereas it might be conceived that they eate the Passeover

standing

ſtanding rather then ſitting, or lying downe, according to the Inſtitution, Exod. 12. Thus ſhall you eate with your loynes girded, your ſhooes on your feet, and your ſtaffe in your hand; the Jews themſelves reply, this was not required of ſucceeding generations, and was not obſerved, but in the Paſſeover of Ægypt, and ſo alſo many other injunctions were afterward omitted, as the taking up of the Paſchall Lambe, from the tenth day, the eating of it in their houſes diſperſed, the ſtriking of the bloud on the dore poſts, and the eating thereof in haſte; ſolemnities and Ceremonies primitively enjoyned, afterward omitted, as was alſo this of ſtation, for the occaſion ceaſing, and being in ſecurity, they applyed themſelves unto geſtures in uſe among them.

Chap. VII.

Of the picture of our Saviour with long hayre.

ANother picture there is of our Saviour deſcribed with long haire, according to the cuſtome of the Jews, and his deſcription ſent by Lentulus unto the Senate; wherein indeed the hand of the Painter is not accuſable, but the judgement of the common Spectator conceaving he obſerved this faſhion of his hayre, becauſe he was a Nazarite, and confounding a Nazarite by vow, with thoſe by birth or education.

The Nazarite by vow is declared Numb. 6. and was to refraine three things, drinking of Wine, cutting the hayre, and approaching unto the dead, and ſuch a one was Sampſon: Now that our Saviour was a Nazarite after this kinde, we have no reaſon to determine, for he dranke wine, and was therefore called by the Phariſees οἰνοπότης, a Wine bibber; he approached alſo the dead, as when he raiſed from death Lazarus, and the daughter of Jairus.

The other Nazarite was a Topicall appellation, and applyable unto ſuch as were borne in Nazareth, a City of Galilee, and in the Tribe of Napthali; neither if ſtrictly taken, was our Saviour in this ſenſe a Nazarite; for he was borne in Bethleem in the Tribe of Judah; but might receave that name, becauſe he abode in that City, and was not onely conceaved therein, but there alſo paſſed the ſilent part of his life, after his returne from Ægypt, as is delivered by Matthew, And he came and dwelt in a City called Nazareth, that it might be fulfilled which was ſpoken by the Prophet, he ſhall be called a Nazarene; both which kindes of Nazarites, as they are diſtinguiſhable by Zain, and Tſade in the Hebrew, ſo in the Greeke, by Alpha and Omega; for as Janſenius obſerveth, where the votary Nazarite is mentioned, it is written Ναζαραῖος, as Levit. 6. and Lamentations the fourth, where it is ſpoken of our Saviour, we reade it Ναζωραῖος, as in Matthew, Luke,

and

and John, onely Marke who writ his Gospell at Rome did Latinize and wrote it Ναζαρηνὸν.

Chap. VIII.

Of the pitture of Abraham sacrificing Isaac.

IN the picture of the Immolation of Isaac, or Abraham sacrificing his son, Isaac is described as a little boy, which notwithstanding is not consentaneous unto the authority of Expositors, or the circumstance of the Text; for therein it is delivered that Isaac carried on his back the wood for the sacrifice, which being an holocaust or burnt offering to be consumed unto ashes, we cannot well conceive the wood a burthen for a boy, but such a one unto Isaac, as that which it typified was unto Christ, that is, the wood or crosse whereon he suffered, which was too heavy a loade for his shoulders, and was faine to be relieved therein by Simon of Cyrene.

Againe, he was so farre from a boy, that he was a man growne, and at his full stature, if we beleeve Josephus, who placeth him in the last of Adolescency, and makes him twenty five yeares old; and whereas in the vulgar Translation he is termed *puer*, it must not be strictly apprehended, (for that age properly endeth in puberty, and extendeth but unto fourteen) but respectively unto Abraham, who was at that time above sixscore: And therefore also herein he was not unlike unto him who was after led dumbe unto the slaughter, and commanded by others, who had legions at command, that is in meeknesse and humble submission; for had he resisted, it had not been in the power of his aged parent to have inforced; and many at his yeares, have performed such acts, as few besides at any: David was too strong for a Lion and a Beare, Pompey had deserved the name of Great, Alexander of the same cognomination was Generalissimo of Greece, and Anniball but one yeare after succeeded Asdruball in that memorable Warre against the Romanes.

Chap. IX.

Of the Picture of Moses with Hornes.

IN many peeces, and some of ancient Bibles, Moses is described with Hornes; whereof the ground was surely the Hebrew text, in the History of Moses, when he descended from the mount; for therein the originall word being Æquivocall, and signifying horned as well as shining, the Vulgar Translation hath retained the former; *Qui videbant faciem egredientis Moysis esse cornutam.* But the word in the Septuagint is ἐδοξάσθη,

ἐδοξάθη, that is his face was glorified, and this passage of the Old Testament is well explaned by another of the New, that is Corinth. 3. wherein it is delivered that they could not stedfastly behold the face of Moses, διὰ τὴν δόξαν τοῦ προσώπου, that is, for the glory of his face. And surely the exposition of one Text is best performed by another, men vainly interposing their constructions, where the Scripture decideth the controversie; and therefore some have seemed too active in their expositions, who in the story of Rahab the harlot, have given notice that the word also signifieth an Hostesse; for in the Epistle to the Hebrewes, she is plainly tearmed πόρνη, which signifies not an Hostesse, but a pecuniary and prostituting Harlot, a tearme applyed unto Lais by the Greeks, and distinguished from ἑταίρα, or *amica*, as may appeare in the thirteenth of Athenæus.

And therefore more allowable is the Translation of Tremellius, then that of the Vulgar, *Quod splendida facta esset cubis faciei ejus*; or rather as Estius hath interpreted it, *facies ejus erat radiosa*, his face was radiant, and dispersing beames like many hornes and cones about his head; which is also consonant unto the original signification, and yet observed in the peeces of our Saviour, and the Virgin Mary, who are commonly drawne with scintillations, or radiant Halo's about their head; which after the French expression are usually tearmed, the Glory.

Now if besides this occasionall mistake; any man shall contend a propriety in this picture, and that no injury is done unto Truth by this description, because an horn is the hieroglyphick of authority power & dignity, and in this Metaphor is often used in Scripture, the peece I confesse in this acception is harmelesse and agreeable unto Moses. But if from the common mistake, or any solary consideration we persist in this description, we vilifie the mystery of the irradiation, and authorise a dangerous peece conformable unto that of Jupiter Hammon, which was the Sunne, and therefore described with hornes; as is delivered by Macrobius; *Hammonem quem Deum solem occidentem Lybies existimant, arietinis cornibus fingunt, quibus id animal valet sicut radiis Sol*: we herein also imitate the picture of Pan, and Pagan emblem of Nature; and if (as Macrobius and very good Authors concede) Bacchus (who is also described with hornes) be the same Diety with the Sunne, and if (as Vossius well contendeth) Moses and Bacchus were the same person, their descriptions must be relative, or the Tauricornous picture of the one, perhaps the same with the other.

Chap. X.

Of the Scucheons of the Tribes of Israel.

WE will not passe over the Scucheons of the tribes of Israel, as they are usually described in the Mappes of Canaan and severall

rall other peeces; generally conceived to be the proper coats, and distinctive badges of their severall tribes. So Ruben is conceived to bear three Barres wave, Judah a Lion Rampant, Dan a Serpent nowed, Simeon a Sword inpale the point erected, &c. the ground whereof is the last Benediction of Jacob, wherein he respectively draweth com-
Gen. 49. parisons from things here represented.

Now herein although we allow a considerable measure of truth, yet whether as they are usually described, these were the proper cognizances, and coat armes of the Tribes, whether in this manner applyed, and upon the grounds presumed, materiall doubts remaine.

For first, they are not strictly made out, from the Propheticall blessing of Jacob; for Simeon and Levi have distinct coats, that is a Sword, and the two tables, yet are they by Jacob included in one Propheſie, Simeon and Levi are brethren, Instruments of cruelties are in their habitations. So Joseph beareth an Oxe, whereof notwithstanding there is no mention in this Propheſie; for therein it is said Joseph is a fruitfull bough, even a fruitfull bough by a well; by which repetition are intimated the two Tribes descending from him Ephraim and Manasses; whereof notwithstanding Ephraim beareth an Oxe: True it is, that
Deut. 33. many yeares after in the benediction of Moses, it is said of Joseph, His glory is like the firstlings of his Bullocke; and so wee may concede, what Vossius learnedly declareth, that the Ægyptians represented Joseph in the symbole of an Oxe, for thereby was best implyed the dreame of Pharaoh, which he interpreted, the benefit by Agriculture, and provident provision of corne which he performed, and therefore did Serapis beare a bushell upon his head.

Againe, if we take these two benedictions together, the resemblances are not appropriate; and Moses therein conformes not unto Jacob; for that which in the Propheſie of Jacob is appropriated unto one, is in the blessing of Moses made common unto others: So whereas Judah is compared unto a Lion by Jacob, Judah is a Lions whelpe; the same is applyed unto Dan by Moses, Dan is a Lions whelpe, he shall leape from Bashan: and also unto Gad, he dwelleth as a Lion, and teareth the arme with the Crowne of the head.

Thirdly, if a Lyon were the proper coat of Judah, yet were it not probably a Lyon Rampant, as it is commonly described, but rather couchant or dormant, as some Heralds and Rabins doe determine, according to the letter of the Text, *Recumbens dormisti ut Leo*, He couched as a Lyon, and as a young Lyon, who shall rouse him?

Lastly, when it is said, Every man of the children of Israel shall pitch
Numb. 2. by his owne standard with the Ensigne of their fathers house; upon enquiry what these standards and ensignes were there is no small incertainty, and men conforme not unto the Propheſie of Jacob. Christian Expositors are fayne herein to relye upon the Rabbins, who notwithstanding

ſtanding are various in their traditions, and confirme not theſe common deſcriptions; for as for inferiour Enſignes either of particular bands or houſes they determine nothing at all, and of the foure principle or Legionary ſtandards, that is of Judah, Ruben, Ephraim, and Dan, (under every one whereof marched three tribes) they explaine them very variouſly. Jonathan who compiled the Thargum, conceives the colours of theſe banners to anſwer the pretious ſtones in the breaſtplate, and upon which the names of the Tribes were engraven. So the ſtandard for the campe of Judah, was of three colours according unto the ſtones, Chalcedony, Saphir, and Sardonix; and therein were expreſſed the names of the three tribes, Judah, Iſachar, and Zabulon, and in the middeſt thereof was witten, Riſe up Lord, and let thy enemies be ſcattered, and let them that hate thee flye before thee; in it was alſo the pourtrait of a Lyon: The ſtandard of Ruben was alſo of three colours, Sardine, Topaz, and Amethyſt, therein were expreſſed the names of Ruben, Simeon, and Gad, in the middeſt was written, Heare, O Iſrael, the Lord our God, the Lord is one: Therein was alſo the pourtraiture of a Hart. But Abenezra and others beſide the colours of the field, do ſet downe other charges, in Rubens the forme of a man or mandrake, in that of Judah a Lyon, in Ephraims an Oxe, in Dan's the figure of an Ægle.

Numb. 10.

Deut. 6.

And thus indeed the foure figures in the banners of the principall ſquadrons of Iſrael are anſwerable unto the Cherubins in the viſion of Ezechiel, every one carrying the forme of all theſe: As for the likeneſſe of their faces, they foure had the likeneſſe of the face of a Man, they foure had alſo the face of an Ægle, and the face of a Lyon on the right ſide, and they foure had the face of an Oxe on the left ſide, they foure had alſo the face of an Ægle; and conformable hereunto the pictures of the Evangeliſts (whoſe Goſpells are the Chriſtian banners) are ſet forth with the addition of a Man or Angell, an Oxe, a Lyon, and an Ægle; and theſe ſymbolically repreſent the office of Angells, and Miniſters of Gods will; in whom is required underſtanding as in a Man, courage and vivacity as in the Lyon, ſervice and miniſteriall officiouſneſſe, as in the Oxe, expedition or celerity of execution, as in the Ægle.

Ezek. 1.

From hence therefore we may obſerve that theſe deſcriptions the moſt authenticke of any, are neither agreeable unto one another, nor unto the Scuchions in queſtion; for though they agree in Ephraim and Judah, that is the Oxe and the Lyon, yet doe they differ in thoſe of Dan, and Ruben, as farre as an Ægle is different from a Serpent, and the figure of a Man, Hart, or Mandrake, from three Barres wave, wherein notwithſtanding we rather declare the incertainty of Armes in this particular, then any way queſtion their antiquity; for hereof more ancient examples there are, then the Scucheons of the Tribes, if Oſyris,

Mizraim or Jupiter the Juſt, were the ſon of Cham; for of his two ſons, as Diodorus delivereth, the one for his Device gave a Dogge, the other a Wolfe; and beſide the ſhield of Achilles, and many ancient Greeks, if we receive the conjecture of Voſſius, that the Crow upon Corvinus his head, was but the figure of that Animall upon his helmet, it is an example of Antiquity among the Romans.

Chap. XI.

Of the Pictures of the Sibylls.

THe Pictures of the Sibylls are very common, and for their Propheſies of Chriſt in high eſteem with Chriſtians; deſcribed commonly with youthfull faces, and in a defined number; common peeces making twelve, and many preciſely ten, obſerving therein the account of learned Varro; that is, Sibylla Delphica, Erythræa, Samia, Cumana, Cumæa, or Cimmeria, Helleſpontiaca, Lybica, Phrygia, Tiburtina, Perſica. In which enumeration I perceive learned men are not ſatisfied, and many conclude an irreconcilable incertainty; ſome making more, others fewer, and not this certaine number; for Suidas though he affirme that in divers ages there were ten, yet the ſame denomination he affordeth unto more; Boyſardus in his Tract of Divination hath ſet forth the Icons of theſe Ten, yet addeth two others, Epirotica, and Ægyptia; and ſome affirme that Propheſying women were generally named Sibylls.

Others make them fewer: Martianus Capella two, Pliny and Solinus three, Ælian foure, and Salmaſius in effect but ſeven; for diſcourſing hereof in his Plinian Exercitations, he thus determineth; *Ridere licet hodiernos Pictores, qui tabulas proponunt Cumanæ, Cumeæ, & Erythrææ, quaſi trium diverſarum Sibyllarum; cum una eademque fuerit Cumana, Cumæa, & Erythræa, ex plurium & doctiſſimorum Authorum ſententia*: Boyſardus gives us leave to opinion there was no more then one; for ſo doth he conclude, *In tantâ Scriptorum varietate liberum relinquimus Lectori credere, an una & eadem in diverſis regionibus peregrinata, cognomen ſortita ſit ab iis locis ubi oracula reddidiſſe comperitur, an plures extiterint*: And therefore not diſcovering a reſolution of their number from the pens of the beſt Writers, we have no reaſon to determine the ſame from the hand and pencill of Painters.

As touching their age, that they are generally deſcribed as young women, Hiſtory will not allow; for the Sibyll whereof Virgill ſpeaketh is tearmed by him *longæva ſacerdos*, and Servius in his Comment amplifieth the ſame. The other that ſold the bookes unto Tarquine, and whoſe Hiſtory is plainer then any, by Livie and Gellius is tearmed *Anus*, that is properly no woman of ordinary age, but full of yeares, and

Anus, quaſi Ἀνὸς, ſine mēte

and in the dayes of doteage, according to the Etymology of Festus, and consonant unto the History; wherein it is said, that Tarquine thought she doted with old age; which duly perpended, the *Licentia picturia* is very large, and with the same reason they may delineate old Nestor like Adonis, Hecuba with Helens face, and Time with Absalons head.

Chap. XII.

Of the Picture describing the death of Cleopatra.

THe Picture concerning the death of Cleopatra with two Aspes or venemous Serpents unto her armes, or breasts, or both, requires consideration: for therein (beside that this variety is not excusable) the thing it selfe is questionable; nor is it indisputably certaine what manner of death she dyed. Plutarch in the life of Antonie plainly delivereth, that no man knew the manner of her death; for some affirmed she perished by poyson, which she alwayes carried in a little hollow combe, and wore it in her hayre; beside there were never any Aspes discovered in the place of her death, although two of her maids perished also with her, only it was said two small and almost insensible prickes were found upon her arme; which was all the ground that Cæsar had to presume the manner of her death. Galen who was contemporary unto Plutarch, delivereth two wayes of her death: that is, that shee killed her selfe by the bite of an Aspe, or bit an hole in her arme, and powred poyson therein. Strabo that lived before them both, hath also two opinions, that she dyed by the byte of an Aspe, or else a poysonous oyntment.

We might question the length of the Aspes which are sometimes described exceeding short, whereas the Cherſæa or land Aspe which most conceive she used, is above foure cubits long: their number is not unquestionable; for whereas there are generally two described, Augustus (as Plutarch relateth) did carry in his triumph the Image of Cleopatra but with one Aspe unto her arme: as for the two pricks, or little spots in her arme, they rather infer the sex, then plurality: for like the viper, the female Aspe hath foure, but the male two teeth, whereby it left this impression, or double puncture behinde it.

And lastly, we might question the place; for some apply them unto her breast, which notwithstanding will not consist with the history, and Petrus Victorius hath well observed the same: but herein the mistake was easie, it being the custome in capitall malefactors to apply them unto the breast, as the Author *De Theriaca ad Pisonem*, an eye-witnesse hereof in Alexandria, where Cleopatra dyed, determineth: I beheld saith he, in Alexandria, how suddenly these Serpents bereave

a man of life; for when any one is condemned to this kinde of death, if they intend to use him favourably, that is, to dispatch him suddenly, they fasten an Aspe unto his breast, and bidding him walke about, he presently perisheth thereby.

Chap. XIII.

Of the Pictures of the nine Worthies.

THe pictures of the nine Worthies are not unquestionable, and to criticall spectators may seeme to containe sundry improprieties: Some will enquire why Alexander the Great is described upon an Elephant? for indeed, we do not finde he used that animall in his Armies, much lesse in his owne person; but his horse is famous in history, and its name alive to this day: Beside, he fought but one remarkable battaile, wherein there were any Elephants, and that was with Porus King of India; In which notwithstanding, as Curtius, Arrianus, and Plutarch report, he was on horseback himselfe; and if because hee fought against Elephants, he is with propriety set upon their backs, with no lesse or greater reason is the same description agreeable unto Judas Maccabeus, as may be observed from the history of the Maccabees; and also unto Julius Cæsar, whose triumph was honoured with captive Elephants, as may be observed in the order thereof, set forth by *Iacobus Laurus*: and if also wee should admit this description upon an Elephant, yet were not the manner thereof unquestionable, that is, in his ruling the beast alone; for, beside the champion upon their back, there was also a guide or Ruler, which sate more forward to command or guide the beast: Thus did King Porus ride when hee was overthrowne by Alexander; and thus are also the towred Elephants described, Maccab. 2. 6. Upon the beasts there were strong towres of wood which covered every one of them, and were girt fast unto them by devices; there were also upon every one of them thirty two strong men, beside the Indian that ruled them.

Others will demand, not onely why Alexander upon an Elephant, but Hector upon an Horse? whereas his manner of fighting, or presenting himselfe in battaile, was in a Chariot, as did the other noble Trojans, who as Pliny affirmeth were the first inventers thereof; the same way of fight is testified by Diodorus, and thus delivered by Sir Walter Raleigh. Of the vulgar little reckoning was made, for they fought all on foote, slightly armed, and commonly followed the successe of their Captaines, who roade not upon horses, but in Chariots drawne by two or three horses; and this was also the ancient way of fight among the Britaines, as is delivered by Diodorus, Cæsar, and Tacitus; and there want not some who have taken advantage hereof,

and

and made it one argument of their originall from Troy.

Laſtly, by any man verſed in Antiquity, the queſtion can hardly be avoyded, why the horſes of theſe Worthies, eſpecially of Cæſar, are deſcribed with the furniture of great ſadles, and ſtyrrops; for ſadles largely taken, though ſome defence there may be, yet that they had not the uſe of ſtirrops, ſeemeth out of doubt; as Pancirollus hath obſerved, as Polydore Virgil and Petrus Victorius have confirmed, expreſly diſcourſing hereon; as is obſervable from Pliny, and cannot eſcape our eyes in the ancient monuments, medals and Triumphant arches of the Romanes. Nor is there any genuine or claſſick word in Latine to expreſſe them; for *ſtaphia* or *ſtapes* is not to be found in Authors of Antiquity; and whereas the name might promiſe ſome Antiquity, becauſe among the three ſmall bones in the Auditory Organ, by Phyſitians termed *Incus Malleus*, and *ſtapes*, one thereof from ſome reſemblance doth beare this name; theſe bones were not obſerved, much leſſe named by Hippocrates, Galen or any ancient Phyſitian; but as Laurentius obſerveth concerning the invention of the ſtapes or ſtirrop bone, there is ſome contention betweene *Columbus* and *Ingraſſias*, the one of Sicilia, the other of Cremona, and both within the compaſſe of this Century.

The ſame is alſo deduceable from very approved Authors: Polybius ſpeaking of the way which Anniball marched into Italy, uſeth the word βεβηματίσται, that is ſaith *Petrus Victorius*, it was ſtored with devices for men to get upon their horſes, which aſcents were termed *Bemata*; and in the life of Caius Gracchus, Plutarch expreſſeth as much; for endeavouring to ingratiate himſelfe with the people, beſides the placing of ſtones at every miles end, he made at neerer diſtances certaine elevated places, and Scalary aſcents, that by the help thereof they might with better eaſe aſcend or mount their horſes. Now if we demand how Cavalliers then deſtitute of ſtirrops did uſually mount their horſes, *Vegetius* reſolves us, that they uſed to vault or leape up, and therefore they had wooden horſes in their houſes and abroad, that thereby young men might enable themſelves in this action, wherein by inſtruction and practice they grew ſo perfect, that they could vault up on the right or left, and that with their ſword in hand, according to that of Virgil——*Poſcit equos, atque arma ſimul ſaltuq; ſuperbus*
Emicat. And againe:
Infrænant alii currus & corpora ſaltu
Injiciunt in equos.——And ſo Julius Pollux adviſeth to teach horſes to incline, dimit, and bow downe their bodies, that their riders may with better eaſe aſcend them; and thus may it more cauſally be made out, what Hippocrates affirmeth of the Scythians, that uſing continuall riding, they were generally moleſted with the Sciatica or hippegowte; or what Suetonius delivereth of Germanicus, that

that he had ſlender legs, but encreaſed them by riding after meales; that is, the humours, deſcending upon their penduloſity, they having no ſupport or ſuppedaneous ſtability.

Now if any ſhall ſay that theſe are petty errors and minor lapſes not conſiderably injurious unto truth, yet is it neither reaſonable nor ſafe to contemne inferiour falſities; but rather as betweene falſhood and truth, there is no medium, ſo ſhould they be maintained in their diſtances, nor the inſinuation of the one, approach the ſincerity of the other.

Chap. XIV.

Of the Picture of Jephtha ſacrificing his daughter.

THe hand of the Painter confidently ſetteth forth the picture of Jephthah in the poſture of Abraham, ſacrificing his onely daughter; Thus indeed is it commonly received, and hath had the atteſt of many worthy Writers; notwithſtanding upon enquiry wee finde the matter doubtfull, and many upon probable grounds to have beene of another opinion; conceaving in this oblation not a naturall but a Civill kinde of death, and a ſeperation onely unto the Lord; for that he purſued not his vow unto a literall oblation, there want not arguments both from the Text and reaſon.

For firſt, it is evident that ſhe deplored her virginity, and not her death; Let me goe up and downe the mountaines, and bewayle my virginity, I and my fellowes.

Secondly, when it is ſaid, that Jephthah did unto her according unto his vow, it is immediately ſubjoyned, *Et non cognovit virum*, and ſhee knew no man, which as immediate in words, was probably moſt neere in ſence unto the vow.

Thirdly, it is ſaid in the Text, that the daughters of Iſrael went yearely to talke with the daughter of Jephthah foure dayes in the yeare, which had ſhe beene ſacrificed, they could not have done; For whereas the word is ſometime tranſlated to lament, yet doth it alſo ſignifie to talke or have conference with one, and by Tremellius who was well able to judge of the Originall, it is in this ſence tranſlated: *Ibant filii Iſraelitarum ad confabulandum cum filia Iephthaci quatuor diebus quotannis:* And ſo it is alſo ſet downe in the marginall notes of our Tranſlation: And from this annuall concourſe of the daughters of Iſrael, it is not improbable in future Ages, the daughter of Jephthah came to be worſhipped as a Deity, and had by the Samaritans an annuall feſtivity obſerved unto her honour, as Epiphanius hath left recorded in the hereſie of the Melchidecians.

It is alſo repugnant unto reaſon, for the offering of mankinde was againſt

against the Law of God, who so abhorred humane sacrifice, that he admitted not the oblation of uncleane beasts, and confined his altars but unto five kinds of Animals; that is, the Oxe, the Goat, the Sheepe, the Pigeon and its kinds: in the cleansing of the leper, there is I confesse, mention made of the Sparrow, but great dispute may be made whether it be properly rendred, and therefore the Scripture with indignation, oft times makes mention of humane sacrifice among the Gentiles, whose oblations scarce made scruple of any Animall, sacrificing not onely man, but Horses, Lyons, Ægles; and though they come not into holocausts, yet do we read the Syrians did make oblations of fishes unto the goddesse Derceto; It being therefore a sacrifice so abominable unto God, although hee had pursued it, it is not probable the Priests and wisedom of Israel would have permitted it, and that not onely in regard of the subject or sacrifice it selfe, but also the sacrificator, which the picture makes to be Jepthah, who was neither Priest, nor capable of that office; for he was a Gileadite, and as the text affirmeth, the son also of an harlot; And how hardly the Priesthood would endure encroachment upon their function, a notable example there is in the Story of Ozias.

Secondly, the offering up of his daughter was not onely unlawfull, and entrenched upon his religion, but had beene a course and progresse that had much condemned his discretion, that is, to have punished himselfe in the strictest observance of his Vow, when as the Law of God had allowed an evasion; that is, by way of commutation or redemption, according as is determined, Levi. 27. whereby if she were between the age of five and twenty, shee was to be estimated but at ten shekels, and if between twenty and sixty, not above thirty, a sum that could never discourage an indulgent Parent, it being but the value of a servant slain, and the inconsiderable Salarie of Judas, and will make no greater noise then three pound fifteen shillings with us; and therefore their conceit is not to be exploded, who say that from the Story of Jepthah sacrificing his owne daughter, might spring the fable of Agamemnon, delivering unto sacrifice his daughter Iphigenia, who was also contemporary unto Jepthah; wherein to answere the ground that hinted it, Iphigenia was not sacrificed her self, but redeemed with an Hart, which Diana accepted for her.

Now the ground at least which much promoted the opinion, might be the dubious words of the text, which containe the sense of his vow; most men adhering unto their common and obvious acception. Whatsoever shall come forth of the doores of my house shall surely be the Lords, and I will offer it up for a burnt offering. Now whereas it is said, *Erit Iehovæ, & offeram illud holocaustum*, The word signifying both *&* and *aut*, it may be taken disjunctively; *aut offeram*, that is, it shall either be the Lords by separation, or else, an holocaust by common

mon oblation, even as our marginal translation advertiseth, and as Tremellius rendreth it, *Erit inquam Iehovæ, aut offeram illud holocaustum:* and for the vulgar translation, it useth often & where *aut* must be presumed, as Exod. 21. *Si quis percusserit patrem & matrem*, that is not both, but either. There being therefore two wayes to dispose of her, either to separate her unto the Lord, or offer her as a sacrifice, it is of no necessitie the latter should bee necessary; and surely lesse derogatorie unto the sacred text, and history of the people of God, must bee the former.

Chap. XV.

Of the picture of Iohn the Baptist.

THe picture of John the Baptist, in a Camells skin is very questionable, and many I perceive have condemned it; the ground or occasion of this description are the words of the holy Scripture, especially of Matthew and Marke, for Luke and John are silent herein; by them it is delivered, his garment was of Camells haire, and had a leatherne girdle about his loynes. Now here it seemes the Camels hair is taken by Painters for the skinne or pelt with the haire upon it: But this exposition will not so well consist with the strict acception of the words; for Marke 1. It is said, he was ἐνδεδυμένος τρίχας καμήλου, and Matthew 3, εἶχε τὸ ἔνδυμα ἀπὸ τριχῶν καμήλου, that is, as the vulgar translation, that of Beza, that of Sixtus Quintus, and Clement the eight hath rendred it, *vestimentum habebat e pilis camelinis*; which is as ours translateth it, a garment of Camells haire; that is made of some texture of that haire, a course garment, a cilicious or sackcloth habit; sutable to the austerity of his life, and the severity of his doctrine, Repentance, and the place thereof the wildernes, his food and diet locusts and wilde hony; agreeable unto the example of Elias, who Kings 1. 8. is said to *vir pilosus*, that is as Junius and Tremellius interpret, *Veste villoso cinctus*, answerable unto the habit of the ancient Prophets, according to that of Zachary 13. In that day the Prophets shall be ashamed, neither shall they weare a rough garment to deceive, and sutable to the Cilicious and hairie Vestes of the strictest Orders of Friars, who derive the Institution of their Monastick life from the example of John and Elias.

As for the wearing of skinnes, where that is properly intended, the expression of the Scripture is plaine, so is it called Heb. 11. they wandred about ἐν αἰγείοις δέρμασιν, that is in Goats skinnes; and so it is said of our first Parents, Gen. 3. that God made them χιτῶνας δερματίνους *Vestes pelliceas*, or coats of skinnes; which though a naturall habit unto all, before the invention of Texture, was something more unto Adam, who had newly learned to die; for unto him a garment from the dead, was but a Dictate of death, and an habit of mortalitie.

Now

Now if any man will say this habit of Iohn, was neither of Camells skinne, nor any course texture of its haire, but rather some finer weave of Camelot, Grograine or the like, in as much as these stuffes are supposed to be made of the haire of that Animall, or because that Ælian affirmeth, that Camells haire of Persia, is as fine as Milesian wooll, wherewith the great ones of that place were clothed; they have discovered an habite, not onely unsutable unto his leatherne cincture, and the coursnes of his life, but not consistent with the words of our Saviour, when reasoning with the people concerning John, he saith, What went you out into the wildernes to see, a man clothed in soft raiment? Behold they that weare soft rayment are in Kings houses.

CHAP. XVI.

Of the picture of S. Christopher.

THe picture of St Christopher, that is a man of a Giant like stature, bearing upon his shoulders our Saviour Christ, and with a staffe in his hand, wading thorow the water, is known unto children, common over all Europe, not onely as a signe unto houses, but is described in many Churches, and stands Colossus like in the entrance of *Nostre Dame* in *Paris*.

Now from hence, common eyes conceive an history sutable unto this description, that he carried our Saviour in his Minority over some river or water, which notwithstanding wee cannot at all make out; for wee read not thus much in any good Author, nor of any remarkable Christopher, before the reigne of Decius, who lived 250. yeares after Christ; this man indeed according unto History suffered as a Martyr in the second yeare of that Emperour, and in the Roman Calender takes up the 21. of Iuly.

The ground that begat or promoted this opinion was, first the fabulous adjections of succeeding ages, unto the veritable acts of this Martyr, who in the most probable accounts was remarkable for his staffe, and a man of a goodly stature.

The second was a mistake or misapprehension of the picture; most men conceiving that an History which was contrived at first but as an Emblem or Symbolicall fancy, as from the Annotations of Baronius upon the Roman Martyrology, Lipellous in the life of St Christopher hath observed in these words; *Acta S. Christophori à multis depravata inveniuntur; quod quidem non aliunde originem sumpsisse certum est, quam quod Symbolicas figuras imperiti ad veritatem successu temporis transtulerint; itaq; cuncta illa de Sancto Christophero pingi consueta, Symbola potius quam historiæ alicujus existimandum est, esse expressam imaginem:* Now what Emblem this was, or what its signification con-

conjectures are many; Pierius hath ſet downe one, that is, of the Diſciple of Chriſt; for he that will carry Chriſt upon his ſhoulders, muſt relye upon the ſtaffe of his direction, whereon if he firmeth himſelfe, he may be able to overcom the billows of reſiſtance, and in the vertue of this ſtaffe like that of Jacob paſſe over the waters of Jordan: or otherwiſe thus; He that will ſubmit his ſhoulders unto Chriſt, ſhall by the concurrence of his power encreaſe into the ſtrength of a Gyant, and being ſupported by the ſtaffe of his holy Spirit, ſhall not be overwhelmed by the waves of the world, but wade through all reſiſtance.

Chap. XVII.

Of the Picture of S. George.

THe Picture of St. George killing the Dragon, and, as moſt ancient draughts doe run, with the daughter of a King ſtanding by, is famous amongſt Chriſtians; and upon this deſcription dependeth a ſolemne ſtory, how by this atchieveme he redeemed a Kings daughter, which is more eſpecially beleeved by the Engliſh, whoſe Protector he is, and in which forme and hiſtory, according to his deſcription in the Engliſh Colledge at Rome, he is ſet forth in the Icons or Cuts of Martyrs by Cevallerius. Now of what authority ſoever this piece be among us, it is I perceive received with different belieſes: for ſome men beleeve the perſon and the ſtory; ſome the perſon, but not the ſtory, and others deny both.

That ſuch a perſon there was, we ſhall not contend: the indiſtinction of many in the community of name, or the application of the act of one unto another, have made ſome doubt there was no ſuch man at all; For of this name we meet with more then one in hiſtory, and no leſſe then two of Cappadocia, the one an Arrian, who was ſlain by the Alexandrians in the time of Julian, the other a valiant Souldier and Chriſtian Martyr, beheaded in the reigne of Diocleſian: And this is the George conceived in this picture, who hath his day in the Romane Calender, on whom ſo many fables are delivered, whoſe ſtory is ſet forth by Metaphraſtes, and his myracles by Turonenſis.

As for the ſtory depending hereon, we cannot make out the verity thereof, and conceive the literall acception a meere miſtake of the ſymbolicall exppeſſion; apprehending that a veritable hiſtory, which was but an emblem or peece of Chriſtian poſie. And this Emblematicall conſtruction hath been received by men who are not forward to extenuate the acts of their Saints, as from Baronius, Lipellous the Carthuſian hath delivered in the life of St. George. *Picturam illam St. Georgii quâ effingitur eques armatus, qui haſtæ cuſpide hoſtem interficit juxta quam etiam virgo poſita manus ſupplices tendens ejus explorat auxilium Symboli potius quam hiſtoriæ alicujus cenſenda expreſſa Imago, conſuevit quidam*

ut

ut equestris militiæ miles equestri imagine referri.

Now in the picture of this Sr. and Souldier was implyed the Christian Souldier and true Champion of Christ; A horseman armed *Cap a pe*, intimating the Panoplia or compleat armour of a Christian, combating with the Dragon, that is, with the Divell, in defence of the Kings daughter, that is the Church of God; and therefore although the history be not made out, it doth not disparage the Knights and noble order of Sr. George, whose cognisance is honourable in the emblem of the Souldier of Christ, and is a worthy memoriall to conforme unto its mystery; nor, were there no such person at all, had they more reason to be ashamed, then the noble order of Burgundy; and Knights of the golden Fleece, whose badge is a confessed fable.

Chap. XVIII.

Of the Picture of Jerome.

THe Picture of Jerome usually described at his study, with a Clock hanging by him is not to be omitted; for though the meaning bee allowable, and probable it is that industrious Father did not let slip his time without account, yet must not perhaps that Clocke be set downe to have been his measure thereof: For Clocks are Automatous organs, and such whereby we now distinguish of time, have found no mention in any ancient Writers, but are of late invention, as Pancirollus observeth, and Polydore Virgil discoursing of new inventions whereof the authors are not knowne makes instance in Clocks and Guns: now Jerome is no late Writer, but one of the ancient Fathers, and lived in the fourth Century, in the reigne of Theodosius the first.

It is not to be denyed that before the dayes of Jerome there were Horologies, and severall accounts of time; for they measured the hours not only by drops of water in glasses called Clepsydræ, but also by sand in glasses called Clepsammia; there were also from great antiquity, Sciotericall or Sun Dialls, by the shadow of a stile or gnomon denoting the houres of the day: an invention ascribed unto Anaximenes by Pliny; hereof a very memorable one there was in Campus Martius from an obelisk erected, & golden figures placed horizontally about it, which was brought out of Ægypt by Augustus, and described by Jacobus Laurus. And another of great antiquity we meet with in the story of Ezechias; for so it is delivered Kings 2.20. That the Lord brought the shadow backward ten degrees by which it had gone down in the Diall of Ahaz; that is, say some, ten degrees, not lines, for the houres were denoted by certaine divisions or steps in the Diall, which others distinguished by lines according to that of Persius——

Stertimus indomitum quod despumare Falernum

Sufficiat quintâ dum linea tangitur umbrâ.—That is, the line next the Meridian, or within an houre of noone.

Of latter yeares there ſucceeded new inventions, and horologies compoſed by Trochilick or the artifice of wheeles, whereof ſome are kept in motion by weight, others performe without it: now as one age inſtructs another, and time that brings all things to ruine perfects alſo every thing, ſo are theſe indeed of more generall and ready uſe then any that went before them: by the water-glaſſes the account was not regular; for from attenuation and condenſation, whereby that Element is altered, the houres were ſhorter in hot weather then in cold, and in Summer then in Winter; as for Sciotericall Dialls, whether of the Sunne or Moon, they are only of uſe in the actuall radiation of thoſe Luminaries, and are of little advantage unto thoſe inhabitants, which for many months enjoy not the luſtre of the Sun.

It is I confeſſe no eaſie wonder how the horometry of Antiquity diſcovered not this Artifice, how Architas that contrived the moving Dove, or rather the Helicoſcopie of Archimedes, fell not upon this way, ſurely as in many things, ſo in this particular, the preſent age hath farre ſurpaſſed Antiquity, whoſe ingenuity hath been ſo bold not only to proceed, below the account of minutes, but to attempt perpetuall motions, and engines whoſe revolutions (could their ſubſtance anſwer the deſigne) might outlaſt the examplary mobility, and out meaſure time it ſelfe; for ſuch a one is that mentioned by John Dee, whoſe words are theſe in his learned Preface unto Euclide: By wheeles ſtrange works and incredible are done: A wondrous example was ſeen in my time in a certaine Inſtrument, which by the Inventer and Artificer was ſold for twenty talents of Gold; and then by chance had received ſome injury, and one Janellus of Cremona did mend the ſame, and preſented it unto the Emperour Charles the fift. Jeronymus Cardanus, can be my witneſſe, that therein was one wheele that moved in ſuch a rate, that in ſeven thouſand yeares onely his owne period ſhould be finiſhed; a thing almoſt incredible, but how far I keep within my bounds, many men yet alive can tell.

Chap. XIX.

Of the Pictures of Mermaids, Unicornes, and ſome others.

FEw eyes have eſcaped the Picture of the Mermaids; that is, according to Horace his Monſter, with womans head above, and fiſhy extremity below: and this is conceived to anſwer the ſhape of the ancient Syrens that attempted upon Ulyſſes, which notwithſtanding were of another deſcription, containing no fiſhie compoſure; but made up of Man and Bird; the humane mediety variouſly placed not only above but

but below, according unto Ælian, Suidas, Servius, Boccatius, and Aldrovandus, who hath referred their description unto the story of fabulous birds, according to the description of Ovid, and the account thereof in Hyginus, that they were the daughters of Melpomene, and metamorphosied into the shape of man and bird by Ceres.

And therefore these pieces so common among us, do rather derive their originall, or are indeed the very descriptions of Dagon, which was made with humane figure above, and fishy shape below; whose stumpe, or as Tremellius and our margin renders it, whose fishie part onely remained, when the hands and upper part fell before the Arke. 1 Sam. 5. Of the shape of Atergates, or Derceto with the Phæniceans; in whose fishie and feminine mixture, as some conceive, were implyed the Moon and the Sea, or the Deity of the waters; and therefore, in their sacrifices they made oblations of fishes: from whence were probably occasioned the pictures of Nereides and Tritons among the Grecians, and such as we reade in Macrobius, to have beene placed on the top of the temple of Saturne.

We are unwilling to question the Royall supporters of England, that is, the approved descriptions of the Lion and the Unicorne; although, if in the Lion the position of the pizell be proper, and that the naturall situation; it will be hard to make out their retrocopulation, or their coupling and pissing backward, according to the determination of Aristotle; All that urine backward do copulate πυγιδὸν, *clunatim*, or averssly, as Lions, Hares, Linxes.

As for the Unicorne, if it have the head of a Deere, and the tayle of a Boare, as Vartomannus describeth it, how agreeable it is in this picture every eye may discerne: if it be made bisulcous or cloven footed, it agreeth unto the description of Vartomannus, but scarce of any other; and Aristotle supposeth that such as devide the hoofe doe double the horne; they being both of the same nature, and admitting division together. And lastly, if the horne have this situation, and be so forwardly affixed, as is described, it will not be easily conceived, how it can feed from the ground, and therefore we observe that Nature in other cornigerous animals, hath placed the hornes higher and reclining, as in Bucks; in some inverted upwards, as in the Rhinoceros, the Indian Asse, and the Unicornous Beetles, and thus have some affirmed it is seated in this animall.

Wee cannot but observe that in the picture of Jonah and others, Whales are described with two prominent spouts on their heads; whereas indeed they have but one in the forehead, and terminating over the windepide. Nor can we overlooke the picture of Elephants with Castles on their backs, made in the forme of land Castles, or stationary fortifications, and answerable unto the Armes of Castile, or Sir John Old Castle; whereas the towres they bore were made of wood,

wood, and girt unto their bodies, as is delivered in the books of Maccabees, and as they were appointed in the Army of Antiochus.

We will not dispute the pictures of Telary Spiders, and their position in the web, which is commonly made laterall, and regarding the Horizon; although, if it be observed, wee shall commonly finde it downeward, and their heads respecting the Center: We will not controvert the picture of the seven Stars, although if thereby be meant the Pleiades, or subconstellation upon the back of Taurus, with what congruity they are described, either in site or magnitude, in a cleere night an ordinary eye may discover, from July unto April. We will not question the tongues of Adders and Vipers, described like an Anchor, nor the picture of the Flower *de Luce*; though how farre they agree unto their naturall draughts, let every Spectator determine.

Many more there are whereof our pen shall take no notice, nor shall we urge their enquiry; we shall not enlarge with what incongruity, and how dissenting from the pieces of Antiquity, the pictures of their gods and goddesses are described, and how hereby their symbolicall sence is lost, although herein it were not hard, to be informed from Phornutus, Fulgentius, and Albricus. Whether Hercules be more properly described strangling then tearing the Lion, as Victorius hath disputed, nor how the characters and figures of the Signes and Planets be now perverted, as Salmasius hath learnedly declared: Wee will dispence with Beares with long tayles, such as are described in the figures of heaven; We shall tolerate flying Horses, black Swans, Hydrae's, Centaur's, Harpies, and Satyres; for these are monstrosities, rarities, or else Poeticall fancies, whose shadowed moralities requite their substantiall falsities: wherein indeed we must not deny a liberty, nor is the hand of the Painter more restrainable then the pen of the Poet; but where the real works of Nature, or veritable acts of story are to be described, digressions are aberrations; and Art being but the Imitator or secondary representor, it must not vary from the verity of the example, or describe things otherwise then they truly are or have beene: for hereby introducing false Idea's of things, it perverts and deformes the face and symmetrie of truth.

Chap. XX.

Of the Hieroglyphicall pictures of the Egyptians.

CErtainly of all men that suffered from the confusion of Babel, the Ægyptians found the best evasion; for, though words were confounded, they invented a language of things, and spake unto each other by common notions in Nature, whereby they discourled in silence, and were intuitively understood from the theory of their Expresses: for,

for, they assumed the shapes of animals common unto all eyes, and by their conjunctions and compositions were able to communicate their conceptions unto any that coapprehended the Syntaxis of their natures. This doe many conceive to have beene the primitive way of writing, and of greater Antiquity then letters; and this indeed might Adam well have spoken, who understanding the nature of things, had the advantage of naturall expressions, which the Ægyptians but taking upon trust upon their owne or common opinion, from conceded mistakes they authentically promoted errors, describing in their Hieroglyphicks creatures of their owne invention; or from knowne and conceded animals, erecting significations not inferrible from their natures.

And first, although there were more things in Nature then words which did expresse them, yet even in these mute and silent discourses, to expresse complexed significations, they took a liberty to compound and piece together creatures of allowable formes unto mixtures inexistent; and thus began the descriptions of Griphins, Basilisks, Phænix, and many more; which Emblematists and Heralds have entertained with significations answering their institutions; Hieroglyphically adding Martegres, Wivernes, Lion-fishes, with divers others; pieces of good and allowable invention unto the prudent Spectator, but are lookt on by vulgar eyes as literall truths, or absurd impossibilities; whereas, indeed they are commendable inventions, and of laudable significations.

Againe, beside these pieces fictitiously set downe, and having no copy in Nature, they had many unquestionably drawne of inconsequent signification, nor naturally verifying their intention. Wee shall instance but in few, as they stand recorded by Orus: The male sex they expressed by a Vulture, because of Vultures all are females, and impregnated by the winde, which authentically transmitted hath passed many pens, and became the assertion of Ælian, Ambrose, Basil, Isidore, Tzetzes, Philes, and others; wherein notwithstanding what injury is offered unto the Creation in this confinement of sex, and what disturbance unto Philosophy in the concession of windy conceptions, wee shall not here declare: By two dragmes they thought it sufficient to signifie an heart, because the heart at one yeare weigheth two dragmes; that is, a quarter of an ounce, and unto fifty yeares annually encreaseth the weight of one dragme, after which in the same proportion it yearely decreaseth; so that the life of a man doth not naturally extend above an hundred, and this was not onely a popular conceit, but consentaneous unto their Physicall principles, Heurnius hath accounted it, in his *Philosophica Barbarica*.

A woman that hath but one childe, they expresse by a Lion-esse; for that conceaveth but once: fecundity they set forth by a Goate, because but seven dayes old, it beginneth to use coition: the abortion of a woman

man they describe by an horse kicking a wolfe; becauſe a Mare will caſt her fole if ſhe tread in the track of that animall. Deformity they ſignifie by a Beare, and an unſtable man by an Hyæna, becauſe that animall yearely exchangeth his ſex: A woman delivered of a female child, they imply by a Bull looking over his left ſhoulder, becauſe if in coition a Bull part from a Cow on that ſide, the Calfe will prove a female.

All which with many more, how farre they conſent with truth, we ſhall not diſparage our Reader to diſpute; and though ſome way allowable unto wiſer conceits, who could diſtinctly receive their ſignifications; yet carrying the majeſty of Hieroglyphicks, and ſo tranſmitted by Authors, they crept into a beliefe with many, and favourable doubt with moſt: And thus, I feare, it hath fared with the Hieroglyphicall ſymboles of Scripture, which excellently intended in the ſpecies of things ſacrifized, in the prohibited meates, in the dreames of Pharaoh, Joſeph, and many other paſſages, are oft times wrackt beyond their ſymbolizations, and inlarg'd into conſtructions diſparaging their true intentions.

Chap. XXI.

Compendiouſly of many queſtionable cuſtomes, opinions, pictures, practiſes, and popular obſervations.

1. IF an Hare croſſe the high way there are few above threeſcore that are not perplexed thereat, which notwithſtanding is but an Auguriall terror, according to that received expreſſion, *Inauſpicatum dat iter oblatus Lepus*, and the ground of the conceit was probably no greater then this, that a fearfull animall paſſing by us portended unto us ſome thing to be feared; as upon the like conſideration the meeting of a Fox preſaged ſome future impoſture, which was a ſuperſtitious obſervation prohibited unto the Jews, as is expreſſed in the Idolatry of Maimonides, and is referred unto the ſin of an obſerver of Fortunes, or that abuſeth events unto good or bad ſignes, forbidden by the Law of Moſes, which notwithſtanding ſometimes ſucceeding, according to feares or deſires, have left impreſſions and timerous expectations in credulous minds for ever. Deut. 18.

2. That Owles and Ravens are ominous appearers, and preſignifying unlucky events, as Chriſtians yet conceit, was alſo an Auguriall conception. Becauſe many Ravens were ſeene when Alexander entered Babylon, they were thought to preominate his death; and becauſe an Owle appeared before the battaile, it preſaged the ruine of Craſſus, which though decrepite ſuperſtitions, and ſuch as had their nativity in times beyond all hiſtory, are freſh in the obſervation of many heads,

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and by the credulous and feminine partie ſtill in ſome Majeſtie among us. And therefore the Embleme of Superſtition was well ſet out by Ripa, in the picture of an Owle, an Hare, and an old woman; and it no way confirmeth the Auguriall conſideration, that an Owle is a forbidden food in the Law of Moſes; or that Jeruſalem was threatned by the Raven and the Owle, in that expreſſion of Eſay 34. That it ſhould be a court for Owles, that the Cormorant and the Bitterne ſhould poſſeſſe it, and the Owle and the Raven dwell in it; for thereby was only implyed their enſuing deſolation, as is expounded in the words ſucceeding, he ſhall draw upon it the line of confuſion, and the ſtones of emptineſſe.

3. The falling of Salt is an authenticke preſagement of ill lucke, nor can every temper contemne it, from whence notwithſtanding nothing can be naturally feared: nor was the ſame a generall prognoſticke of future evill among the ancients, but a particular omination concerning the breach of friendſhip: for ſalt as incorruptible, was the Simbole of friendſhip, and before the other ſervice was offered unto their gueſts; which if it caſually fell was accounted ominous, and their amitie of no duration.

4. To breake the eggeſhell after the meat is out, wee are taught in our childhood, and practiſe it all our lives, which nevertheleſſe is but a ſuperſtitious relict according to the judgement of Plinie; *Huc pertinet overum, ut exorbuerit quiſq; calices protinus frangi, aut eoſdem cochlearibus perforari*, and the intent hereof was to prevent witchcraft; for leſt witches ſhould draw or pricke their names therein, and veneficiouſly miſchiefe their perſons, they broke the ſhell, as Dalecampius hath obſerved.

5. The true lovers knot is very much magnified and ſtill retained in preſents of love among us, which though in all points it doth not make out, had perhaps its originall from Nodus Herculanus, or that which was called Hercules his knot, reſembling the Snaky complication in the caduceus or rod of Hermes; and in which forme the Zone or woollen girdle of the Bride was faſtened, as Turnebus obſerveth in his Adverſaria.

6. When our cheeke burneth or eare tingleth, wee uſually ſay that ſome body is talking of us; which is an ancient conceit, and ranked among ſuperſtitious opinions by Plinie. *Abſentes tinnitu aurium preſentire ſermones de ſe receptum eſt*, according to that Diſticke noted by Dalecampius.

Garrula quid totis reſonas mihi noctibus auris?
Neſcio quem dicis nunc meminiſſe mei: which is a conceit hardly to be made out without the conceſſion of a ſignifying Genius, or univerſall Mercury, conducting ſounds unto their diſtant ſubiects, and teaching us to heare by touch.

7. When wedesire to confine our words we commonly say they are spoken under the Rose; which expression is commendable, if the Rose from any naturall propertie may be the Symbole of silence, as Nazianzene seemes to imply in these translated verses.

Vtq; latet Rosa Verna suo putamine clausa,
Sic os vincla ferat, validisq; arcetur habenis;
Indicatq; suis prolixa silentia labris, and is also tolerable, if by desiring a secrecy to words spoke under the Rose, wee onely meane in society and compotation, from the ancient custome in Symposiacke meetings, to weare chapletts of Roses about their heads; and so we condemne not the Germane custome, which over the Table describeth a Rose in the seeling; but more considerable it is, if the originall were such as Lemnius and others have recorded; that the Rose was the flower of Venus, which Cupid consecrated unto Harpocrates the God of silence, and was therefore an Emblem thereof to conceale the prancks of Venery, as is declared in this Tetrasticke ——

Est Rosa flos veneris, cujus quo facta laterent
Harpocrati matris, dona dicavit Amor;
Inde Rosam mensis hospes suspendit Amicis,
Convivæ ut sub eâ dicta tacenda sciant.

8. That smoake doth follow the faireſt is an usuall saying with us, and in many parts of Europe, whereof although there seeme no naturall ground, yet is it the continuation of a very ancient opinion, as Petrus Victorius and Causabon have observed from a passage in Athenæus, wherein a Parasite thus describeth himselfe.

To every table first I come,
Whence Porridge I am cald by some:
A Capaneus at stares I am,
To enter any roome a Ramme;
Like whipps and thongs to all I ply,
Like smoke unto the faire I fly.

9. To set crosse legg'd, or with our fingers pectinated or shut together is accounted bad, and friends will perswade us from it. The same conceit religiously possessed the Ancients, as is observable from Pliny. *Poplites alternis genibus imponere nefas olim*; and also from Athenæus, that it was an old venesicious practise, and Iuno is made in this posture to hinder the delivery of Alcmæna; and therefore, as Pierius observeth, in the Medall of Julia Pia the right hand of Venus, was made extended with the inscription of Venus Genetrix; for the complication or pectination of the fingers was an Hieroglyphick of impediment, as in that place he declareth.

10. The set and statary times of payring of nailes, and cutting of haire is thought by many a point of consideration, which is perhaps but the continuation of an ancient superstition: for piaculous it was

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unto the Romanes to pare their nayles upon the nundinæ obſerved every ninth day; and was alſo feared by others in certaine dayes of the weeke, according to that of Auſonius, Ungues Mercurio, Barbam Jove, Cypride *crines*; and was one part of the wickednes that filled up the meaſure of Manaſſes, when tis delivered hee obſerved times, Chron. 2. 23.

11. A common faſhion it is to nouriſh haire upon the molls of the face, which is the perpetuation of a very ancient cuſtome, and though innocently practiſed among us, may have a ſuperſtitious originall, according to that of Pliny; *Nævos in facie tondere religioſum habent nunc multi*; from the like might proceed the feares of polling Elvelockes or complicated haires of the head, and alſo of locks longer then the other haire, they being votary at firſt, and dedicated upon occaſion, preſerved with great care, and accordingly eſteemed by others, as appears by that of Apuleius; *Adjuro per dulcem capilli tui nodulum.*

12. A cuſtome there is in moſt parts of Europe to adorn Aqueducts, ſpouts and Ciſternes with Lions heads; which though no illaudable ornament is an Ægyptian continuation, who practiſed the ſame under a ſymbolicall illation; for becauſe the Sun being in Leo, the flood of Nilus was at the full, and water became conveyed into every part, they made the ſpouts of their Aqueducts through the head of a Lion: and upon ſome celeſtiall reſpects it is not improbable the great Mogull or Indian King doth beare for his Armes a Lion and the Sun.

13. Many conceive there is ſomewhat amiſſe, and that as we uſually ſay, they are unbleſt untill they put on their girdle: wherein (although moſt know not what they ſay) there are involved unknowne conſiderations; for by a girdle or cincture are ſymbollically implied Truth, Reſolution and Readineſſe unto Action, which are parts and vertues required in the ſervice of God: according whereto we finde that the Iſraelites eat the Paſchall Lambe with their loynes girded, and the Almighty challenging Job, bids him gird up his loynes like a man; ſo runneth the expreſſion of Peter, Gird up the loynes of your mindes, be ſober and hope to the end; ſo the high Prieſt was girt with the girdle of fine linnen; ſo is it part of the holy habit to have our loynes girt about with truth; and ſo is it alſo ſaid concerning our Saviour, Righteouſneſſe ſhall be the girdle of his loynes, and faithfulneſſe the girdle of his reines. Eſay 11.

Moreover by the girdle the heart and parts which God requires are devided from the inferiour and epithumeticall organs; implying thereby a memento unto purification and cleanneſſe of heart, which is commonly defiled from the concupiſcence and affection of thoſe parts; and therfore unto this day the Jews do bleſſe themſelves when they put on their zone or cincture: and thus may we make out the doctrine of Pythagoras, to offer ſacrifice with our feet naked, that is, that our inferiour

parts and fartheſt removed from Reaſon might be free, and of no impediment unto us. Thus Achilles though dipped in Styx, yet having his heele untouched by that water, although he were fortified elſewhere, he was ſlaine in that part, and as only vulnerable in the inferiour and brutall part of Man: This is that part of Eve and her poſterity the divel ſtill doth bruiſe, that is, that part of the ſoul which adhereth unto earth, and walks in the paths thereof; and in this ſecondary and ſymbolicall ſenſe it may be alſo underſtood, when the Prieſts in the Law waſhed their feet before the ſacrifice; when our Saviour waſhed the feet of his Diſciples, and ſaid unto Peter, if I waſh not thy feet thou haſt no part in me; and thus is it ſymbollically explainable and implieth purification and cleanneſſe, when in the burnt offerings the Prieſt is commanded to waſh the inwards and legs thereof in water, and in the peace and ſin-offerings, to burne the two kidneys, the fat which is about the flancks, and as we tranſlate it the Caul above the Liver. But whether
Jer. 13. the Jewes when they bleſſed themſelves, had any eye unto the words of Jeremy, wherein God makes them his Girdle; or had therein any reference unto the girdle, which the Prophet was commanded to hide in the hole of the rock of Euphrates, and which was the type of their captivity, we leave unto higher conjecture.

14. The picture of the Creator, or God the Father in the ſhape of an old Man, is a dangerous piece, and in this fecundity of ſects may revive the Anthropomorphites, which although maintained from the expreſſion of Daniel, I beheld where the Ancient of dayes did ſit, whoſe haire of his head was like the pure woole; yet may it be alſo derivative from the Hieroglyphicall deſcription of the Ægyptians, who to expreſſe their Eneph, or Creator of the world, deſcribed an old man in a blew mantle, with an egge in his mouth, which was the emblem of the world. Surely thoſe heathens, that notwithſtanding their exemplary advantage in heaven, would endure no pictures of Sun or Moone, as being viſible unto all the world, and needing no repreſentation, do evidently accuſe the practiſe of thoſe pencils, that will deſcribe inviſibles. And he that challenged the boldeſt hand unto the picture of an Echo, muſt laugh at this attempt not onely in the deſcription of inviſibility, but circumſcription of Ubiquity, and fetching under lines incomprehenſible circularity.

The pictures of the Ægyptians were more tolerable, and in their ſacred letters more veniably expreſſed the apprehenſion of Divinity; for though they implyed the ſame by an eye upon a Scepter, by an Eagles head, a Crocodill and the like; yet did theſe manuall deſcriptions pretend no corporall repreſentations, nor could the people miſconceive the ſame unto reall correſpondencies. So though the Cherub carryed ſome apprehenſion of Divinity, yet was it not conceived to be the ſhape thereof: and ſo perhaps becauſe it is metaphorically predi-

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cated of God, that he is a consuming fire, he may be harmlesly described by a flaming representation: yet if, as some will have it, all mediocrity of folly is fooliſh, and becauſe an unrequitable evill may enſue, an indifferent convenience muſt be omitted; we ſhall not urge ſuch repreſentments, wee could ſpare the holy Lamb for the picture of our Saviour, and the Dove or fiery Tongues to repreſent the holy Ghoſt.

15. The Sun and Moone are uſually deſcribed with humane faces; whether herein there be not a Pagan imitation, and thoſe viſages at firſt implyed Apollo and Diana we make ſome doubt; and wee finde the ſtatua of the Sun was framed with rayes about the head, which were the indiciduous and unſhaven locks of Apollo. We ſhould be too Iconomicall to queſtion the pictures of the winds, as commonly drawne in humane heads, and with their cheeks diſtended, which notwithſtanding wee finde condemned by Minutius, as anſwering poeticall fancies, and the gentile diſcription of Æolus Boreus, and the feigned Deities of winds. Or quarelſome with pictures.

16. We ſhall not, I hope, diſparage the Reſurrection of our Redeemer, if we ſay the Sun doth not dance on Eaſter day. And though we would willingly aſſent unto any ſympathicall exultation, yet cannot conceive therein any more then a Tropicall expreſſion; whether any ſuch motion there were in that day wherein Chriſt ariſed, Scripture hath not revealed, which hath beene punctuall in other records concerning ſolary miracles: and the Areopagite that was amazed at the Eccliſe, tooke no notice of this, and if metaphoricall expreſſions goe ſo farre, we may be bold to affirme, not onely that one Sun danced, but two aroſe that day: That light appeared at his nativity, and darkeneſſe at his death, and yet a light at both; for even that darkneſſe was a light unto the Gentiles, illuminated by that obſcurity. That 'twas the firſt time the Sun ſet about the Horizon, that although there were darkeneſſe above the earth there was light beneath it, nor dare we ſay that hell was darke if he were in it.

17. Great conceits are raiſed of the involution or membranous covering, commonly called the ſilly how, that ſometimes is found about the heads of children upon their birth, and is therefore preſerved with great care, not onely as medicall in diſeaſes, but effectuall in ſucceſſe, concerning the Infant and others, which is ſurely no more then a continued ſuperſtition; for hereof we reade in the life of Antoninus delivered by Spartianus, that children are borne ſometimes with this naturall cap, which Midwives were wont to ſell unto credulous Lawyers, who had an opinion it advantaged their promotion.

But to ſpeake ſtrictly the effect is naturall, and thus to be conceaved, the Infant hath three teguments, or membranous filmes which cover it in the wombe, that is, the Corion, Amnios, and Allantois; the Corion is the outward membrane wherein are implanted the veynes, Arteries

teries and umbilicall veſſels, whereby its nouriſhment is conveyed: the Allantois a thin coat ſeated under the Corion, wherein are received the watery ſeparations conveyed by the urachus, that the acrimony thereof ſhould not offend the skin. The Amnios is a generall inveſtment, containing the ſudorous or thin ſeroſity perſpirable through the skin. Now about the time when the Infant breaketh theſe coverings, it ſometime carryeth with it about the head a part of the Amnios or neereſt coat; which ſaith Spiegelius, either proceedeth from the toughneſſe of the membrane or weakeneſſe of the Infant that cannot get cleare thereof: & therefore herein ſignifications are naturall and concluding upon the Infant, but not to be extended unto magical ſignalities or any other perſō.

18. That 'tis good to be drunke once a month, is a common flattery of ſenſuality, ſupporting it ſelfe upon phyſick, and the healthfull effects of inebriation. This indeed ſeemes plainly affirmed by Avicenna, a Phyſitian of great Authority, and whoſe religion prohibiting Wine could leſſe extenuate ebriety. But Averroes a man of his owne faith was of another beliefe, reſtraining his ebriety unto hilarity, and in effect making no more thereof, then Seneca commendeth, and was allowable in Cato; that is, a ſober incaleſcence and regulated æſtuation from wine, or what may be conceived betweene Joſeph and his brethren, when the Text expreſſeth they were merry, or dranke largely; and whereby indeed the commodities ſet downe by Avicenna, that is, alleviation of ſpirits, reſolution of ſuperfluities, provocation of ſweat and urine may alſo enſue. But as for dementation, ſopition of reaſon, and the diviner particle from drinke, though American religion approve, and Pagan piety of old hath practiſed, even at their ſacrifices; Chriſtian morality and the Doctrine of Chriſt will not allow. And ſurely that religion which excuſeth the fact of Noah, in the aged ſurpriſall of ſix hundred yeares, and unexpected inebriation from the unknowne effects of wine, will neither acquit ebrioſity nor ebriety, in their knowne and intended perverſions.

And indeed, although ſometimes effects ſucceed which may relieve the body, yet if they carry miſchiefe or perill unto the ſoule, we are therein reſtraineable by Divinity, which circumſcribeth Phyſick, and circumſtantially determines the uſe thereof. From naturall conſiderations, Phyſick commendeth the uſe of venery; and happily, inceſt, adultery, or ſtupration may prove as phyſically advantageous, as conjugall copulation; which notwithſtanding muſt not bee drawne into practiſe. And truly effects, conſequents, or events which wee commend, ariſe oft times from wayes which all condemne. Thus from the fact of Lot, we derive the generation of Ruth, and bleſſed Nativity of our Saviour; which notwithſtanding did not extenuate the inceſtuous ebriety of the generator. And if, as it is commonly urged, we thinke to extenuate ebriety from the benefit of vomit oft ſucceeding; Ægyp-

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tian ſobriety will condemne us, who purgeth both wayes twice a month, without this perturbation: and we fooliſhly contemne the liberall hand of God, and ample field of medicines which ſoberly produce that action.

19. A conceit there is that the Devill commonly appeareth with a cloven hoofe, wherein although it ſeeme exceſſively ridiculous there may be ſomewhat of truth; and the ground thereof at firſt might be his frequent appearing in the ſhape of a Goat, which anſwers that deſcription. This was the opinion of ancient Chriſtians concerning the apparitions of Panites, Fauns and Satyres, and in this forme we reade of one that appeared unto Antony in the wilderneſſe. The ſame is alſo confirmed from expoſitions of holy Scripture; for whereas it is ſaid, Thou ſhalt not offer unto Devils, the Originall word is *Seghnirim*, that is, rough and hayrie Goats, becauſe in that ſhape the Devill moſt often appeared, as is expounded by the Rabbins, as Tremellius hath alſo explained; and as the word Aſcimah, the god of Emath is by ſome conceived; nor did he onely aſſume this ſhape in elder times, but commonly in later dayes, eſpecially in the place of his worſhip. If there be any truth in the confeſſion of Witches, and as in many ſtories it ſtands confirmed by Bodinus; and therefore a Goat is not improperly made the Hieroglyphick of the Devill, as Pierius hath expreſſed it; ſo might it be the Embleme of ſin, as it was in the ſin offering; and ſo likewiſe of wicked and ſinfull men, according to the expreſſion of Scripture in the method of the laſt diſtribution, when our Saviour ſhall ſeparate the Sheep from the Goats, that is, the ſons of the Lamb from the children of the Devill. Lev. 17.

20. A ſtrange kinde of exploration and peculiar way of Rhabdomancy is that which is uſed in Minerall diſcoveries, that is, with a forked hazell, commonly called Moſes his rod, which freely held forth, will ſtirre and play if any mine be under it: and though many there are who have attempted to make it good, yet untill better information, we are of opinion with Agricola, that in it ſelfe it is a fruitleſſe exploration, ſtrongly ſenting of Pagan derivation, and the *virgula Divina*, proverbially magnified of old; the ground whereof were the Magicall rods in Poets; that of Pollas in Homer, that of Mercury that charmed Argus, and that of Circe which transformed the followers of Ulyſſes; too boldly uſurping the name of Moſes rod; from which notwithſtanding, and that of Aaron were probably occaſioned the fables of all the reſt; for that of Moſes muſt needs be famous unto the Ægyptians, and that of Aaron unto many other nations, as being preſerved in the Arke, untill the deſtruction of the Temple built by Solomon.

21. A practiſe there is among us to determine doubtfull matters, by the opening of a booke, and letting fall a ſtaffe; which notwithſtanding

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are ancient fragments of Pagan divination; the first an imitation of *sortes Homericæ*, or *Virgilianæ*, drawing determinations from verses casually occurring. The same was practised by Severus, who entertained ominous hopes of the Empire, from that verse in Virgil, *Tu regere imperio populos Romane memento*; and Gordianus who reigned but few dayes was discouraged by another, that is, *Ostendunt terris hunc tantum fata nec ultra esse sinunt*. Nor was this onely performed in Heathen Authors, but upon the sacred text of Scripture, as *Gregorius Turonensis* hath left some account, and as the practise of the Emperour Heraclius, before his Expedition into Asia minor, is delivered by Cedrenus.

Hosea 4. As for the Divination or decision from the staffe it is an Auguriall relique, and the practise thereof is accused by God himselfe; My people aske counsell of their stocks, and their staffe declareth unto them. And of this kinde of Rhabdomancy was that practised by Na-

Ezek. 24. buchadonosor in that Caldean miscellany, delivered by Ezekiel, The King of Babylon stood at the parting of the way, at the head of the two wayes to use divination, he made his arrowes bright, he consulted with Images, he looked in the Liver; at the right hand were the divinations for Jerusalem, that is, as Estius expoundeth it the left way leading unto Rhabbah the chiefe city of the Ammonites, and the right unto Jerusalem, he consulted Idols and entrals, he threw up a bundle of Arrowes, to see which way they would light, and falling on the right hand he marched towards Jerusalem. A like way of Belomancy or Divination by Arrowes hath beene in request with Scythians, Alanes, Germans, with the Africans and Turks of Algier; but of another nature was that which was practised by Elisha, when by an Arrow shot from an Easterne window, he presignified the destruction of Syria; or when according unto the three stroakes of Joash, with an arrow upon the ground, he foretold the number of his victories; for thereby the Spirit of God particular'd the same, and determined the stroakes of the King unto three, which the hopes of the Prophet expected in twice that number.

We are unwilling to enlarge concerning many other, onely referring unto Christian considerations, what naturall effects can reasonably be expected, when to prevent the Ephialtes or night-Mare we hang up an hallow stone in our stables; when for amulets against Agues wee use the chips of Gallowes and places of Execution. When for warts wee rub our hands before the Moone, or commit any maculated part unto the touch of the dead. Swarmes hereof our learned Selden and criticall Philologers might illustrate, whose abler performances our adventures doe but sollicite, meane while we hope they wil plausibly receave our attempts, or candidely correct our misconjectures.

THE

THE SIXTH BOOK.

Of ſundry common opinions Coſmographicall and Hiſtoricall. The firſt Diſcourſe comprehended in ſeverall Chapters.

Chap. I.

Concerning the beginning of the World, that the time thereof is not preciſely to bee knowne, as men generally ſuppoſe: Of mens enquiries in what ſeaſon or point of the Zodiack it began. That as they are generally made they are in vaine, and as particularly applyed uncertain. Of the diviſion of the ſeaſons and foure quarters of the yeare, according to Aſtronomers and Phyſitians. That the common compute of the Ancients, and which is yet retained by moſt, is unreaſonable and erroneous. Of ſome divinations and ridiculous diductions from one part of the yeare to another. And of the providence and wiſdome of God in the ſite and motion of the Sun.

Oncerning the World and its temporall circumſcriptions, who ever ſhall ſtrictly examine both extreams, ſhall eaſily perceive there is not onely obſcurity in its end but its beginning; that as its period is inſcrutable, ſo is its nativity indeterminable: That as it is preſumption to enquire after the one, ſo is there no reſt or ſatisfactory deciſion in the other. And hereunto we ſhall more readily aſſent, if we examine the informations, and take a view of the ſeverall difficulties in this point; which we ſhall eaſily doe, if we conſider the different conceits of men, and duly perpend the imperfections of their diſcoveries.

And firſt, the Heathens or hiſtories of the Gentiles afford us ſlender ſatisfaction, nor can they relate any ſtory, or affixe a probable point to its beginning: For ſome thereof (and thoſe of the wiſeſt amongſt them) are ſo far from determining its beginning, that they opinion and maintaine it never had any at all; as the doctrine of Epicurus implyeth, and more poſitively Ariſtotle in his bookes *de Cælo* declareth, endeavouring to confirme it with arguments of reaſon, and thoſe appearingly demonſtrative; wherein to ſpeake indifferently, his labours are rationall, and uncontroulable upon the grounds aſſumed, that is of Phyſicall ge-

neration, and a primary or first matter, beyond which no other hand was apprehended: But herein we remaine sufficiently satisfied from Moses, and the doctrine delivered of the Creation, that is a production of all things out of nothing, a formation not only of matter, but of forme, and a materiation even of matter it selfe.

Others are so far from defining the originall of the world or of mankinde, that they have held opinions not only repugnant unto Chronology but Philosophy; that is, that they had their beginning in the soyle where they inhabited, assuming or receiving appellations conformable unto such conceits: So did the Athenians tearm themselves αὐτόχθονες or *Aborigines*, and in testimony thereof did weare a golden insect on their heads; the very same name is also given unto the Inlanders or Midland inhabitants of this Island by Cæsar. But this is a conceit answerable unto the generation of the Giants, not admittable in Philosophy, much lesse in Divinity, which distinctly informeth wee are all the seed of Adam, that the whole world perished unto eight persons before the flood, and was after peopled by the Colonies of the sonnes of Noah; there was therefore never any Autochthon, or man arising from the earth but Adam, for the woman being formed out of the rib, was once removed from earth, and framed from that element under incarnation. And so although her production were not by copulation, yet was it in a manner seminall: For if in every part from whence the seed doth flow, there be contained the Idea of the whole, there was a seminality and contracted Adam in the rib, which by the information of a soule, was individuated into Eve. And therefore this conceit applyed unto the orginall of man, and the beginning of the world, is more justly appropriable unto its end; for then indeed men shall rise out of the earth, the graves shall shoot up their concealed seeds, and in that great Autumne men shall spring up, and awake from their Chaos againe.

Others have been so blind in deducing the originall of things, or delivering their owne beginnings, that when it hath fallen into controversie they have not recurred unto Chronologie or the records of time, but betaken themselves unto probabilities, and the conjecturalities of Philosophy. Thus when the two ancient Nations, that is, Ægyptians and Scythians contended for antiquity, the Ægyptians (as Diodorus and Justine relate) pleaded their antiquity from the fertility of their soyl, inferring that men there first inhabited, where they were with most facility sustained, and such a land did they conceive was Ægypt.

The Scythians although a cold and heavier Nation urged more acutely, deducing their arguments from the two active elements and principles of all things Fire and Water; for if of all things there was first an union, and that afterward fire overruled the rest, surely that part of earth which was coldest would first get free, and afford a place of habitation: But if all the earth were first involved in water, those parts would

would surely first appeare, which were most high, and of most elevated situation, and such was theirs: These reasons carried indeed the antiquity from the Ægyptians, but confirmed it not in the Scythians; for as Herodotus relateth from Pargitants their first King unto Darius, they accounted but two thousand years.

As for the Ægyptians they invented another way of triall, for as the same Author relateth, Psamnitichus their King attempted this decision by a new & unknown experiment, bringing up two Infants with goats, and where they never heard the voice of man; concluding that to be the ancientest Nation, whose language they should first deliver; but herein he forgot that speech was by instruction not instinct, by imitation, not by nature; that men do speak in some kind but like Parrets, and as they are instructed, that is in simple tearms and words, expressing the open notions of things, which the second act of reason compoundeth into propositions, and the last into syllogisms & forms of ratiocination. And howsoever the account of Maneth the Ægyptian Priest run very high, and it be evident that Mizraim peopled that Country, whose name with the Hebrews it beareth unto this day; and there be many things of great antiquity related in holy Scripture, yet was their exact account not very ancient; for Ptolomy their Countryman beginneth his Astronomicall compute no higher then Nabonasser, who is conceived by some the same with Salmanasser: As for the argument deduced from the fertility of the soyl, duly enquired, it rather overthroweth then promoteth their antiquity; for that Country whose fertility, they so advance, was in elder and ancient times no firme or open land, but some vast lake or part of the Sea, and became a gained ground by the mud and limous matter brought downe by the river Nilus, which setled by degrees into a firme land; according as is expressed by Strabo, and more at large by Herodotus in his Euterpe, both from the Ægyptian tradition and probable inducements from reason, called therefore *fluvii donum*, an accession of the earth or tract of land acquired by the river.

Lastly, some indeed there are, who have kept records of time, and that of a considerable duration, yet doe the exactest thereof afford no satisfaction concerning the beginning of the world, or any way point out the time of its creation. The most authentick records and best approved antiquity are those of the Chaldeans; yet in the time of Alexander the Great, they attained not so high as the floud: For as Simplicius relateth, Aristotle required of Calisthenes who accompained that Worthy in his expedition, that at his arrive at Babylon, he would enquire of the antiquity of their Records, and those upon compute hee found to amount unto 1903. yeares, which account notwithstanding ariseth no higher then 95. yeares after the floud. The Arcadians I confesse, were esteemed of great Antiquity, and it was usually said they were before the Moone, according unto that of Seneca, *Sydus post*

veteres Arcades editum; and that of Ovid, *Lunâ gens prior illa fuit*: But this as Censorinus observeth, must not be taken grossely, as though they were existent before that Luminary, but were so esteemed because they observed a set course of yeare, before the Greeks conformed their yeare unto the course and motion of the Moon.

Thus the heathens affording no satisfaction herein, they are most likely to manifest this truth who have been acquainted with holy Scripture, and the sacred Chronologie delivered by Moses, who distinctly sets downe this account, computing by certaine intervalls, by memorable Ara's, Epoche's, or tearms of time: As from the creation unto the floud, from thence unto Abraham, from Abraham unto the departure from Ægypt, &c. Now in this number have only beene Samaritans, Jews, and Christians: for the Jews they agree not in their accounts, as Bodine in his method of history hath observed out of Baal Seder, Rabbi Nassom, Gersom, and others, in whose compute the age of the world is not yet 5400. yeares; and the same is more evidently observable from two most learned Jewes, Philo and Josephus, who very much differ in the accounts of time, and variously summe up these intervalls assented unto by all. Thus Philo from the departure out of Ægypt unto the building of the Temple accounts but 920. yeares, but Josephus sets downe 1062. Philo from the building of the Temple to its destruction 440, Josephus 470, Philo from the creation to the destruction of the Temple 3373; but Josephus 3513, Philo from the deluge to the destruction of the Temple 1718, but Josephus 1913, in which computes there are manifest disparities, and such as much divide the concordance and harmony of times.

But for the Samaritans, their account is different from these or any others; for they account from the Creation to the Deluge, but 1302 yeares, which commeth to passe upon the different account of the ages of the Patriarks set downe when they begat children. For whereas the Hebrew, Greek and Latine texts account Jared 162 whenhe begat Enoch, they account but 62, and so in others. Now the Samaritans were no incompetent judges of times and the Chronologie thereof; for they embraced the five bookes of Moses, and, it seemeth, preserved the Text with far more integrity then the Jews; who as Tertullian, Chrysostome, and others observe did severall wayes corrupt the same especially in passages concerning the propheſies of Christ, so that as Jerome professeth, in his translation he was faine sometime to relieve himselfe by the Samaritane Pentateuch, as amongst others in that Text, Deuteronomy 27, *Maledictus omnis qui non permanserit in omnibus quæ scripta sunt in libro Legis.* From hence St. Paul, Gal. 3. inferreth there is no justification by the Law, and urgeth the Text according to the Septuagint. Now the Jewes to afford a latitude unto themselves in their copies expunged the word כל or Syncategorematicall

terme

terme *omnis*, wherein lyeth the ſtrength of the Law, and of the Apoſtles argument; but the Samaritan Bible retained it right, and anſwerable unto what the Apoſtle had urged.

As for Chriſtians from whom wee ſhould expect the exacteſt and moſt concurring account, there is alſo in them a manifeſt diſagreement, and ſuch as is not eaſily reconciled. For firſt, the Latins accord not in their account; for to omit the calculation of the Ancients, of Auſtin, Bede, and others, the Chronology of the Modernes doth manifeſtly diſſent; for Joſephus Scaliger, whom Helvicus ſeemes to follow, accounts the Creation in 765. of the Julian period; and from thence unto the nativity of our Saviour alloweth 3947. yeares; But Dionyſius Petavius a learned Chronologer diſſenteth from this compute almoſt 40. yeares, placing the Creation in the 730. of the Julian period, and from thence unto the Incarnation accounteth 3983. yeares.

For the Greeks, their accounts are more anomalous; for if wee recurre unto ancient computes, we ſhall finde that Clemens Alexandrinus an ancient Father and preceptor unto Origen, accounted from the Creation unto our Saviour, 5664. yeares; for in the firſt of his Stromaticks, he collecteth the time from Adam unto the death of Commodus to be 5858. yeares; now the death of Commodus he placeth in the yeare after Chriſt 194. which number deducted from the former there remaineth 5664. Theophilus Biſhop of Antioch accounteth unto the nativity of Chriſt 5515. deduceable from the like way of compute, for in his firſt booke *ad Antolycum*, he accounteth from Adam unto Aurelius Verus 5695. yeares; now that Emperour dyed in the yeare of our Lord 180. which deducted from the former ſum there remaineth 5515. Julius Africanus an ancient Chronologer, accounteth ſomewhat leſſe, that is, 5500. Euſebius Oroſius and others diſſent not much from this, but all exceed five thouſand.

The latter compute of the Greeks, as Petavius obſerveth, hath been reduced unto two or three accounts. The firſt account unto our Saviour 5501. and this hath beene obſerved by Nicephorus, Theophanes, and Maximus; the other accounts 5509. And this of all at preſent is moſt generally received by the Church of Conſtantinople, obſerved alſo by the Moſcovite, as I have ſeene in the date of the Emperours letters, wherein this yeare of ours 1645. is from the yeare of the world 7154. which doth exactly agree unto this laſt account 5509. for if unto that ſumme be added 1645. the product will be 7154. by this Chronology are many Greeke Authors to be underſtood; and thus is Martinus Cruſius to be made out, when in his Turcogræcian hiſtory he delivers, the City of Conſtantinople was taken by the Turks in the yeare ϛξα that is, 6961. and thus unto theſe Chronologiſts, the Prophecy of Elias the Rabbin, ſo much in requeſt with the Jews, and in ſome credit alſo with Chriſtians, that the world ſhould laſt but ſix thouſand yeares;

yeares; unto these, I say, it hath beene long and out of memory disproved for the sabbaticall and 7000. yeare wherein the world should end, (as did the Creation on the seventh day) unto them is long agoe expired; they are proceeding in the eight thousand yeare, and numbers exceeding those days which men have made the types and shadows of these: But certainly what Marcus Leo the Jew conceaveth of the end of the heavens, exceedeth the account of all that ever shall be; for though he conceaveth the Elementall frame shall end in the seventh or Sabbaticall millenary, yet cannot he opinion the heavens and more durable part of the Creation shall perish before seven times seven, or 49. that is, the Quadrant of the other seven, and perfect Jubilie of thousands.

And thus may we observe the difference and wide dissent of mens opinions, and there by the great incertainty in this establishment. The Hebrews not onely dissenting from the Samaritans, the Latins from the Greeks, but every one from another; insomuch that all can be in the right it is impossible; that any one is so, not with assurance determinable; and therefore as Petavius confesseth; to effect the same exactly without inspiration it is impossible, and beyond the Arithmetick of any but God himselfe: And therefore also what satisfaction may be obtained from those violent disputes, and eager enquirers in what day of the month the world began, either of March or October, likewise in what face or position of the Moone, whether at the prime or full, or soone after; let our second and serious considerations determine.

Now the reason and ground of this dissent, is the unhappy difference betweene the Greek and Hebrew editions of the Bible, for unto these two Languages have all Translations conformed; the holy Scripture being first delivered in Hebrew, and first translated into Greek. For the Hebrew, it is incontrovertibly the primitive and surest text to rely on, and to preserve the same entire and uncorrupt, there hath been used the most apparent caution humanity could invent; For as R. Ben. Maimon hath declared, if in the copying thereof one letter were written twice, or if one letter but touched another, that copy was not admitted into their Synagogues, but onely allowable to be read in Schooles, and private families; neither were they carefull onely in the exact number of their sections of the Law, but had also the curiosity to number every word, and affixed the account unto their severall books: Notwithstanding all which, divers corruptions ensued, and severall depravations slipt in, arising from many and manifest grounds, as hath beene exactly noted by Morinus in his preface unto the Septuagint.

As for the Septuagint, it is the first and most ancient Translation recorded, and of greater Antiquity then is the Chaldie version, occasioned by the request of Ptolomeus Philadelphus King of Ægypt, for the

the richeſt ornament of his memorable Library; unto whom the high Prieſt addreſſed ſix Jews out of every Tribe, which amounteth unto 72. and by theſe was effected that Tranſlation wee uſually terme the Septuagint, or Tranſlation of ſeventy; which name however it obtaine from the number of their perſons, yet in reſpect of one common Spirit, it was the Tranſlation but as it were of one man. For, as the ſtory relateth, although they were ſet apart and ſevered from each other, yet were their Tranſlations found to agree in every point, according as is related by Philo and Joſephus, although wee finde not the ſame in Ariſteus, who hath expreſly treated thereof.

This Tranſlation in ancient times was of great authority: By this many of the Heathens receaved ſome notions of the Creation and the mighty works of God; This in expreſſe termes is often followed by the Evangeliſts, by the Apoſtles, and by our Saviour himſelfe in the quotations of the Old Teſtament. This for many years was uſed by the Jews themſelves, that is, ſuch as did Hellenize and diſperſedly dwelt out of Paleſtine with the Greeks; And this alſo the ſucceeding Chriſtians and ancient Fathers obſerved, although there ſucceeded other Greek verſions, that is, of Aquila, Theodoſius and Symmachus; for the Latin tranſlation of Jerome, called now the Vulgar, was about 800. yeares after, although we ſhall not deny there was a Latin tranſlation before, called the Italick verſion, and Auſtin forbad that of Jerom to be uſed in his Dioceſſe.

Whatſoever Interpretations there have beene ſince, have been eſpecially effected with reference unto theſe, that is, the Greeke and Hebrew text; the Tranſlators ſometimes following the one, ſometimes adhering unto the other, according as they found them conſonant unto truth, or moſt correſpondent unto the rules of faith. Now however it commeth to paſſe theſe two are very different in the enumeration of Genealogies, and particular accounts of time; for in the ſecond intervall, that is betweene the floud and Abraham, there is by the Septuagint introduced one Cainan to be the ſon of Arphaxad and father of Salah; whereas in the Hebrew there is no mention of ſuch a perſon, but Arphaxad is ſet downe to be the father of Salah. But in the firſt intervall, that is, from the Creation unto the floud, their diſagreement is more conſiderable, for therein the Greek exceedeth the Hebrew, and common account almoſt 600. yeares; and 'tis indeed a thing not very ſtrange, to be at the difference of a third part, in ſo large and collective an account, if wee conſider how differently they are ſet forth in minor and leſſe miſtakeable numbers. So in the Propheſie of Jonah, both in the Hebrew and Latin text, it is ſaid, Yet forty dayes and Ninivy ſhall be overthrowne: But the Septuagint ſaith plainly, and that in letters at length, τρεῖς ἡμέραι, that is, yet three dayes and Ninivy ſhall be deſtroyed; which is a difference not newly crept in, but an obſervation

ſervation very ancient, diſcuſſed by Auſtin, and Theodoret, and was conceived an errour committed by the Scribe. Men therefore have raiſed different computes of time, according as they have followed theſe different texts, and ſo have left the hiſtory of times far more perplexed then Chronology hath reduced.

Againe, however the texts were plaine, and might in their numorations agree, yet were there no ſmall difficulty to ſet downe a determinable Chronology, or eſtabliſh from hence any fixed point of time; for the doubts concerning the time of the Judges are inexplicable, that of the Reignes and ſucceſſion of Kings is as perplexed, it being uncertaine whether the yeares both of their lives and reignes ought to bee taken as complete, or in their beginning and but currant accounts. And thus alſo it is not unreaſonable to make ſome doubt whether in the firſt Ages, and long lives of our fathers, Moſes doth not ſometime account by full and round numbers, whereas ſtrictly taken they might be ſome few yeares above or under; As in the age of Noah, it is delivered to be juſt five hundred when he begat Sem, whereas perhaps hee might be ſomewhat above or below that round and complete number, for the ſame way of ſpeech is uſuall in diverſe other expreſſions: Thus doe we ſay the Septuagint, and uſing the full and articulate number, doe write the Tranſlation of Seventy, whereas we have ſhewen before, the preciſe number was ſeventy two; ſo is it ſaid that Chriſt was three dayes in the grave, according to that of Matthew, as Jonas was three dayes and three nights in the Whales belly, ſo ſhall the Son of man be three dayes and three nights in the heart of the earth: which notwithſtanding muſt be taken Synechdochically, or by underſtanding a part for an whole day; for he remained but two nights in the grave, for he was buried in the afternoone of the firſt day, and aroſe very early in the morning on the third; that is, hee was interred in the Eve of the Sabbath, and aroſe the morning after it.

Moreover, although the number of yeares be determined and rightly underſtood, there be without doubt a certaine truth herein, yet the text ſpeaking obſcurely or dubiouſly, there is oft times no ſlender difficulty at what point to begin or terminate the account. So when it is ſaid, Exod. 12. the ſojourning of the children of Iſrael who dwelt in Ægypt was 430. yeares, it cannot be taken ſtrictly, and from their firſt arivall into Ægypt, for their habitation in that land was farre leſſe; but the account muſt begin from the covenant of God with Abraham, and muſt alſo comprehend their ſojourne in the land of Canaan, according as is expreſſed, Gal. 3. The Covenant that was confirmed before of God in Chriſt, the Law which was 430. yeares after cannot diſanull. Thus hath it alſo happened in the account of the 70. yeares of their captivity, according to that of Jeremy, chap. 20. This whole land ſhall be a deſolation, and theſe nations ſhall ſerve the King of Babylon 70. yeares;

yeares; now where to begin, or end this compute ariſeth no ſmall difficulty: for there were three remarkable captivities, and deportations of the Jewes; the firſt was in the third or fourth yeare of Joachim, and firſt of Nabuchodonozer, when Daniel was carryed away; the ſecond in the raigne of Jeconiah, and the eighth yeare of the ſame King; the third and moſt deploreable in the raigne of Zedechias, and in the nineteenth yeare of Nabuchodonozer, whereat both the Temple and City were burned. Now ſuch is the different conceit of theſe times, that men have computed from all; but the probableſt account and moſt concordant unto the intention of Jeremy, is from the firſt of Nabuchodonozer unto the firſt of King Cyrus over Babylon; although the Prophet Zachary, chap. 1. 12. accounteth from the laſt. O Lord of hoſtes, How long! Wilt thou not have mercy on Jeruſalem, againſt which thou haſt had indignation theſe threeſcore and ten yeeres? for he maketh this expoſtulation in the ſecond year of Darius Hiſtaſpes, wherein he propheſied, which is about eighteene yeares in account after the other.

Thus alſo although there be a certaine truth therein, yet is there no eaſie doubt concerning the ſeventie weekes, or ſeventie times ſeven years of Daniel; whether they have reference unto the nativitie or paſſion of our Saviour, and eſpecially from whence, or what point of time they are to be computed; for thus is it delivered by the angel Gabriel: Seventy weekes are determined upon thy people; and againe in the following verſe: Know therefore and underſtand, that from the going forth of the Commandment to reſtore and to build Jeruſalem unto the Meſſias the Prince, ſhall be ſeven weekes, and threeſcore and two weekes, the ſtreet ſhall be built againe, and the wall even in troubleſome times; and after threeſcore and two weekes ſhall Meſſiah be cut off; Now the going out of the Commandment to build the City, beeing the point from whence to compute, there is no ſlender controverſie when to begin; for there are no leſſe then foure ſeverall Edicts to this effect; the one in the firſt yeere of Cyrus, the other in the ſecond of Darius, the third and fourth in the ſeventh, and in the twentieth of Artaxerxes Longimanus; although as Petavius accounteth it beſt, accordeth unto the twentie yeare of Artaxerxes, from whence Nehemiah deriveth his Commiſſion: Now that computes are made incertainely with reference unto Chriſt, it is no wonder, ſince I perceive the time of his Nativitie is in controverſie, and no leſſe his age at his Paſſion: For Clemens and Tertullian conceive he ſuffered at thirtie, but Irenæus a Father nearer his time, is further off in his account, that is, betweene forty and fifty.

Longomontanus a late Aſtronomer, endeavours to diſcover this ſecret from Aſtronomicall grounds, that is, the Apogeum of the Sunne, conceiving the Excentricity invariable, and the Apogeum yearely to

move one ſcruple, two ſeconds, fifty thirds, &c. Wherefore if in the time of Hipparchus, that is, in the yeare of the Julian period 4557. it was in the fifth degree of Gemini, and in the dayes of Tycho Brahe, that is, in the yeare of our Lord 1588. or of the world 5554. the ſame was removed unto the fift degree of Cancer; by the proportion of its motion, it was at the creation firſt in the beginning of Aries, and the Perigeum or neareſt point in Libra. But this conceit how ingenious or ſubtile ſoever is not of ſatisfaction; it being not determinable, or yet agreed in what time preciſely the Apogeum abſolveth one degree, as Petavius hath alſo delivered in his fourth *de Doctrina temporum*.

Laſtly, however theſe or other difficulties intervene, and that wee cannot ſatisfie our ſelves in the exact compute of time, yet may wee notwithſtanding ſit downe with the common and uſuall account; nor are theſe differences derogatorie unto the Advent or Paſſion of Chriſt, unto which indeed they all doe ſeeme to point; for the Prophecies concerning our Saviour, were indefinitely delivered before that of Daniel; for ſo was that pronounced unto Eve in Paradiſe, that after of Balaam, thoſe of Iſaiah and the Prophets, and that memorable one of Jacob, the Scepter ſhall not depart from Iſrael untill Shilo come; which time notwithſtanding it did not define at all. In what year therefore ſoever, either from the deſtruction of the Temple, from the reedifying thereof, from the Flood, or from the Creation he appeared, certaine it is, that in the fulneſſe of time he came. When he therefore came is not ſo conſiderable, as that he is come; in the one there is conſolation, in the other no ſatisfaction; The greater Quere is, when he will come again, and yet indeed it is no Quere at all; for that is never to be knowne, and therefore vainely enquired; 'tis a profeſſed and authentick obſcurity, unknown to all but to the omniſcience of the Almighty. Certainly the ends of all things are wrapt up in the hands of God, he that undertakes the knowledge thereof forgets his owne beginning, and diſclaimes his principles of earth; No man knows the end of the world, nor aſſuredly of any thing in it: God ſees it becauſe unto his Eternity it is preſent, hee knoweth the ends of us, but not of himſelfe, and becauſe hee knowes not this, he knoweth all things, and his knowledge is endleſſe, even in the object of himſelfe.

Chap. II.

Of mens Enquiries in what ſeaſon or point of the Zodiack it began, that as they are generally made they are in vaine, and as perticularly uncertaine.

Concerning the Seaſons, that is, the quarters of the yeare; ſome are ready to enquire, others to determine, in what ſeaſon, whether in the Autumne, Spring, Winter or Summer the world had its beginning.

Where-

Wherein we cannot but affirme, that as the queſtion is generally, and in reſpect of the whole earth propoſed, it is moſt vainely, and with a manifeſt injury unto reaſon in any particular determined, becauſe when ever the world had its beginning it was created in all theſe four. For, as we have elſe where delivered, whatſoever ſigne the Sun poſſeſſeth (whoſe receſſe or vicinity defineth the quarters of the yeare) thoſe four ſeaſons were all actually exiſtent; it being the nature of that Luminary to diſtinguiſh the ſeverall ſeaſons of the yeare, all which it maketh at one time in the whole earth, and ſucceſſively in any part thereof. Thus if wee ſuppoſe the Sunne created in Libra, in which ſigne unto ſome it maketh Autumne, at the ſame time it had beene winter unto the Northern-pole; for unto them at that time the Sun beginneth to be inviſible, and to ſhew it ſelfe againe unto the pole of the South, unto the poſition of a right Sphere, or directly under the Æquator, it had beene Summer; for unto that ſituation the Sunne is at that time verticall: unto the latitude of Capricorne, or the Winter Solſtice it had been ſpring; for unto that poſition it had been in a middle point, and that of aſcent, or approximation; but unto the latitude of Cancer or the Summer Solſtice it had been Autumne; for then had it it beene placed in a middle point, and that of deſcent, or elongation.

And if wee ſhall take it literally what Moſes deſcribed popularly, this was alſo the conſtitution of the firſt day: for when it was evening unto one longitude, it was morning unto another; when night unto one, day unto another; and therefore that queſtion whether our Saviour ſhall come againe in the twilight, as is conceived he aroſe, or whether he ſhall come upon us in the night, according to the compariſon of a thiefe, or the Iewiſh tradition, that he will come about the time of their departure our of Ægypt, when they eate the Paſſeover, and the Angell paſſed by the doores of their houſes; this Quere I ſay needeth not further diſpute, for if the earth be almoſt every where inhabited, and his comming (as Divinity affirmeth) muſt needs be unto all, then muſt the time of his appearance bee both in the day and night: For if unto Jeruſalem, or what part of the world ſoever he ſhall appear in the night, at the ſame time unto the Antipodes it muſt be day, if twilight unto them, broad day unto the Indians; if noone unto them, yet night unto the Americans; and ſo with variety according unto various habitations, or different poſitions of the Spheare, as will be eaſily conceived by thoſe who underſtand the affections of different habitations, and the conditions of Antæci, Perieci, and Antipodes; and ſo although he appeare in the night, yet may the day of Judgement or Doomeſday well retaine that name; for that implyeth one revolution of the Sun, which maketh the νυχθημέρον, that is, the day and night, and that one naturall day: and yet to ſpeake ſtrictly, if (as the Apoſtle affirmeth) we ſhall be changed

in the twinckling of an eye, (and as the Schooles determine) the destruction of the world shall not be successive but in an instant, we cannot properly apply thereto the usuall distinctions of time, calling that twelve houres, which admits not the parts thereof, or use at all the name of time, when indeed the nature thereof shall perish.

But if the enquiry be made unto a particular place, and the question determined unto some certaine Meridian; as namely, unto Mesopotamia, wherein the seat of Paradise is presumed, the Quæry becomes more seasonable, and is indeed in nature also determinable; yet positively to define that season, there is I conceive no slender difficulty; for some contend that it began in the Spring, as beside Eusebius, Ambrose, Bede, and Theodoret, some few years past *Henrico Philippi* in his Chronologie of the Scripture: Others are altogether for Autumne; and from hence doe our Chronologers commence their compute, as may be observed in Helvicus, Jos. Scaliger, Calvisius and Petavius.

Chap. III.

Of the Divisions of the seasons and foure quarters of the yeare, according unto Astronomers and Physitians, that the common compute of the Ancients, and which is still retained by some is very questionable.

As for the divisions of the yeare, and the quartering out this remarkable standard of time, there have passed especially two distinctions; the first in frequent use with Astronomers, according to the cardinall intersections of the Zodiack, that is the two Æquinoctials and both the Solsticial points; defining that time to be the spring of the yeare, wherein the Sunne doth passe from the Æquinox of Aries unto the Solstice of Cancer; the time between the Solstice and the Æquinox of Libra, Summer; from thence unto the Solstice of Capricornus, Autumne; and from thence unto the Æquinox of Aries againe Winter. Now this division although it be regular and equall, is not universall; for it includeth not those latitudes, which have the seasons of the year double; as have the Inhabitants under the Æquator, or else between the Tropicks; for unto them the Sunne is verticall twice a yeare, making two distinct Summers in the different points of verticallity. So unto those which live under the Æquator, when the Sunne is in the Æquinox it is Summer, in which points it maketh Spring or Autumne unto us; and unto them it is also Winter when the Sun is in either Tropick; whereas unto us it maketh alwayes Summer in the one: And the like will happen unto those habitations, which are between the Tropicks, and the Æquator.

A second and more sensible division there is observed by Hippocrates, and most of the ancient Greekes, according to the rising and setting

setting of divers starres, dividing the yeare, and establishing the account of seasons from usuall alterations, and sensible mutations in the ayre, discovered upon the rising and setting of those starres; accounting the Spring from the Æquinoxiall point of Aries, from the rising of the Pleiades, or the severall starres on the backe of Taurus, the Summer, from the rising of Arcturus, a starre between the thighes of Bootes, Autumne, and from the setting of the Pleiades, Winter: of these divisions becausse they were unequall they were faine to subdivide the two larger portions, that is of the Summer and Winter quarters; the first part of the Summer they named θέρος, the second unto the arising of the Dog-star, ὦρος, from thence unto the setting of Arcturus ὀπώρα; the Winter they divided also into three parts, the first part, or that of seed time they named πρώϊμον, the middle or proper Winter, χείμων, the last which was their planting or grafing time φυταλίαν; this way of division was in former ages received, is very often mentioned in Poets, translated from one Nation to another, from the Greeks unto the Latines, as is received by good Authors, and delivered by Physicians, even unto our times.

Now of these two, although the first in some latitude may be retayned, yet is not the other in any to be admitted: For in regard of time (as we declare in the Chap. of canicular dayes) the starres do vary their longitudes, and consequently the times of their ascention and discention; That starre which is the terme of numeration or point, from whence we commence the account, altering his site and longitude in processe of time, and removing from West to East, almost one degree in the space of 72 yeares; so that the same starre, since the age of Hippocrates who used this account, is removed in *consequentia* about 27 degrees; which difference of their longitudes, doth much diversifie the times of their ascents, and rendereth the account unstable which shall proceed thereby.

Againe, in regard of different latitudes, this cannot be a setled rule or reasonably applyed unto many Nations; for whereas the setting of the Pleiades or seven starres is designed the terme of Autumne, and the beginning of Winter; unto some latitudes these starres doe never set, as unto all beyond 67 degrees; and if in severall and farre distant latitudes we observe the same starre as a common terme of account unto both, we shall fall upon an unexpected, but an unsufferable absurdity; and by the same account it will be Summer unto us in the North, before it be so unto those, which unto us are Southward, and many degrees approaching nearer the Sun. For if we consult the doctrine of the sphere, and observe the ascention of the Pleiades, which maketh the beginning of Summer, we shall discover that in the latitude of 40, these starres arise in the 16 degree of Taurus; but in the latitude of 50 they ascend in the eleventh degree of the same signe, that is 5 dayes sooner; so shall it bee

Sum-

Summer unto London before it be unto Toledo, and begin to ſcortch in England, before it grow hot in Spaine.

This is therefore no generall way of compute, nor reaſonable to be derived from one Nation unto another, the defect of which conſideration hath effected divers errors in Latine Poets, tranſlating theſe expreſſions from the Greekes, and many difficulties even in the Greekes themſelves; which living in divers latitudes, obſerved yet the ſame compute; ſo that to make them out, wee are faine to uſe diſtinctions, ſometime computing coſmically what they intended heliacally, and ſometime in the ſame expreſſion the riſing heliacally, the ſetting coſmically; otherwiſe it will be hardly made out, what is delivered by approved Authors; and is an obſervation very conſiderable unto thoſe which meet with ſuch expreſſions in ancient Writers, as they are very frequent in the Poets of elder times, eſpecially Heſiod, Aratus, Virgil, Ovid, and Manilius, and the Authors Geoponicall, or which have treated *de re Ruſtica*, as Conſtantine, Marcus Cato, Columella, Palladius and Varro.

Laſtly, the abſurdity in making common unto many Nations thoſe conſiderations, whoſe verity is but particular unto ſome, will more evidently appeare, if we examine the rules and precepts of ſome one clymate, and fall upon conſideration with what incongruity they are transferable unto others; Thus is it adviſed by Heſiod

Pleiadibus Atlante natis orientibus
Incipe meſſem, Arationem vero occidentibus: implying hereby the Heliacall aſcent and coſmicall deſcent of thoſe ſtarres. Now herein hee ſetteth downe a precept to beginne harveſt at the ariſe of the Pleiades, which in his time was in the beginning of May. This indeed was conſonant unto the clyme wherein he lived, and their harveſt began about that ſeaſon, but is not applyable unto our owne; for therein we are ſo farre from expecting an harveſt, that our Barley ſeed is not ended: Againe, correſpondent unto the precept of Heſiod, Virgil affordeth another—

Ante tibi eoæ Atlantides abſcondantur,
Debita quam ſulcis committas ſemina.

Underſtanding hereby their Coſmicall deſcent, or their ſetting when the Sunne ariſeth, and not their Heliacall obſcuration, or their incluſion in the luſtre of the Sunne, as Servius upon this place would have it; for at that time theſe ſtarres are many ſignes removed from that luminary. Now herein he ſtrictly deliverеth a precept, not to beginne to ſow before the ſetting of theſe ſtarres; which notwithſtanding without an injury to agriculture, cannot be obſerved in England; for they ſet unto us about the 12 of November, when our ſeed time is almoſt ended.

And this diverſity of clyme and obſervations Cæleſtiall, preciſely obſerved

observed unto certaine ſtarres and months, hath not onely overthrown the deductions of one Nation to another, but hath perturbed the obſervation of feſtivities and ſtatary ſolemnities, even with the Jewes themſelves: for unto them it was commanded that at their entrance into the land of Canaan, in the fourteenth of the firſt month, that is Abib or Niſan which is Spring with us, they ſhould obſerve the celebration of the Paſſeover; and on the morrow after, which is the fifteenth day of the feaſt of unleavened bread; and in the ſixteenth of the ſame month, that they ſhould offer the firſt ſheafe of the harveſt. Now all this was feaſible and of an eaſie poſſibility in the land of Canaan, or latitude of Jeruſalem; for ſo is it obſerved by ſeverall Authors in later times, and is alſo teſtified by holy Scripture in times very far before; for ſo when the children of Iſrael paſſed the river Jordan, it is delivered by way of Parentheſis, that the river overfloweth its banks in the time of harveſt, which is conceived the time wherein they paſſed, and chap. 5. it is after delivered, that in the fourteenth day they celebrated the Paſſeover, which according to the Law of Moſes was to be obſerved in the firſt month, or month of Abib. Joſh. 3.

And therefore it is no wonder, nor any Paradox what is related by Luke, that the Diſciples upon the Deuteroproton, as they paſſed by, plucked the ears of corne; for the Deuteroproton or ſecond firſt Sabbath, was the firſt Sabbath after the deutera or ſecond of the Paſſeover, which was the ſixteenth of Niſan or Abib; and this is alſo evidenced from the received conſtruction of the firſt and latter rayne, delivered Deut. 11. I will give you the rain of your land in his due ſeaſon, the firſt rain and the latter raine; for the firſt rayn fell upon the ſeed time about October, and was to make the ſeed to root, the latter was to fill the ear, and fell in Abib, or March the firſt month; according as is expreſſed Joel 2. And he will cauſe to come downe for you the rayne, the former rayne, and the latter rayne in the firſt month, that is the month of Abib wherein the Paſſeover was obſerved. This was the Law of Moſes, and this in the land of Canaan was well obſerved according to the firſt inſtitution; but ſince their diſperſion and habitation in Countries, whoſe conſtitutions admit not ſuch tempeſtivity of harveſt, and many not before the latter end of Summer, notwithſtanding the advantage of their Lunary account, and intercalary month, Veader affixed unto the beginning of the yeare, there will be found a great diſparity in their obſervations, nor can they ſtrictly and at the ſame ſeaſon with their forefathers obſerve the commands of their God.

To adde yet further, thoſe Geoponicall rules and preceps of Agriculture which are delivered by divers Authors, are not to be generally received, but reſpectively underſtood unto clymes wherein they are determined. For whereas one adviſeth to ſow this or that at one ſeaſon, a ſecond to ſet this or that at another, it muſt be conceived relatively,

ly, and every Nation must have its Country Farme; for herein we may observe a manifest and visible difference, not only in the seasons of harvest, but in the graines themselves; for with us Barley harvest is made after Wheat harvest, but with the Israelites and Ægyptians it was otherwise; and so is it expressed by way of priority, Ruth the 2. So Ruth kept fast by the maidens of Boaz to gleane unto the end of Barley harvest and of Wheat harvest; which in the plague of hayle in Ægypt is more plainly delivered Exod. 9. And the Flax and the Barley were smitten, for the Barley was in the eare and the Flax was bolled, but the Wheat and the Rye were not smitten, for they were not growne up.

And thus we see the account established upon the arise or descent of the starres can be no reasonable rule unto distant Nations at all, and by reason of their retrogression but temporary unto any one; nor must these respective expressions be entertained in absolute considerations, for so distinct is the relation, and so artificiall the habitude of this inferiour globe unto the superiour, and even of one thing in each unto the other: that generall rules are dangerous, and applications most safe that runne with security of circumstance, which rightly to effect is beyond the subtilty of sense, and requires the artifice of reason.

Chap. IV.

Of some computation of dayes and diductions of one part of the year unto another.

Fourthly, there are certaine vulgar opinions concerning dayes of the yeare and conclusions popularly deduced from certaine dayes of the month; men commonly beleeving the dayes encrease and decrease equally in the whole yeare, which notwithstanding is very repugnant unto truth; For they encrease in the month of March, almost as much as in the two months of January and February; and decrease as much in September, as they doe in July and August: For indeed the dayes encrease or decrease according to the declination of the Sun; that is, its deviation Northward or Southward from the Æquator. Now this digression is not equall, but neare the Æquinoxiall intersections, it is right and greater, neare the Solstices more oblique and lesser. So from the eleventh of March the vernall Æquinox unto the eleventh of Aprill the Sun declineth to the North twelve degrees; from the eleventh of Aprill unto the eleventh of May but 8, from thence unto the 15 of June, or the Summer Solstice but 3 and a halfe; all which make 23 degrees and an halfe, the greatest declination of the Sun.

And this inequality in the declination of the Sun in the Zodiacke or line of life, is correspondent unto the growth or declination of man; for setting out from our infancie we encrease not equally, or regularly attaine

attaine to our ſtate or perfection; nor when we deſcend from our ſtate, and tend unto the earth againe is our declination equall, or carryeth us with even paces unto the grave. For, as Hippocrates affirmeth, a man is hotteſt in the firſt day of his life, and coldeſt in the laſt; his naturall heate ſetteth forth moſt vigorouſly at firſt, and declineth moſt ſenſibly at laſt. And ſo though the growth of man end not perhaps untill 21. yet in his ſtature more advanced in the firſt ſeptenary then in the ſecond, and in the ſecond, more then in the third, and more indeed in the firſt ſeven yeares, then in the fourteene ſucceeding: for, what ſtature we attaine unto at ſeven yeares, we do ſometimes but double, moſt times come ſhort at one and twenty. And ſo do we decline againe; for in the latter age upon the Tropick and firſt deſcenſion from our ſolſtice, wee are ſcarce ſenſible of declination; but declining further, our decrement accelerates, we ſet apace, and in our laſt dayes precipitate into our graves. And thus are alſo our progreſſions in the wombe, that is, our formation, motion, our birth or excluſion. For our formation is quickly effected, our motion appeareth later, and our excluſion very long after: if that be true which Hippocrates and Avicenna have declared, that the time of our motion is double unto that of formation, and that of excluſion treble unto that of motion; as if the Infant bee formed at 35. dayes, it moveth at 70. and is borne the 210. day, that is, the ſeventh month; or if it receaves not formation before 45. dayes, it moveth the 90. day, and is excluded in 270. that is, the 9. month.

There are alſo certaine popular prognoſticks drawne from feſtivals in the Calendar, and conceaved opinions of certaine dayes in months, ſo is there a generall tradition in moſt parts of Europe, that inferreth the coldneſſe of ſucceeding winter from the ſhining of the Sun upon Candlemas day, according to the proverbiall diſtich.——

Si Sol ſplendeſcat Mariâ purificante,
Major erit glacies poſt feſtum quam fuit ante.

So is it uſuall amongſt us to qualifie and conditionate the twelve months of the yeare, anſwerably unto the temper of the twelve dayes in Chriſtmaſſe, and to aſcribe unto March certaine borrowed dayes from Aprill; all which men ſeeme to beleeve upon annuall experience of their own, and the receaved traditions of their forefathers.

Now it is manifeſt, and moſt men likewiſe know, that the Calenders of theſe computers, and the accounts of theſe dayes are very different; the Greeks diſſenting from the Latins, and the Latins from each other; the one obſerving the Julian or ancient account, as great Britaine and part of Germany; the other adhering to the Gregorian or new account, as Italy, France, Spaine, and the united Provinces of the Netherlands. Now this latter account by ten dayes at leaſt anticipateth the other; ſo that before the one beginneth the accout, the other is paſt it; yet in theſe ſeverall calculations, the ſame events ſeeme true,

and men with equall opinion of verity, expect and confesse a confirmation from them both. Whereby is evident the Oraculous authority of tradition, and the easie seduction of men, neither enquiring into the verity of their substance, nor reforming upon repugnance of circumstance.

And thus may diverse easily be mistaken who superstitiously observe certaine times, or set downe unto themselves an observation of unfortunate months, or dayes, or howres; As did the Ægyptians, two in every month, and the Romans, the dayes after the Nones, Ides, and Calends. And thus the Rules of Navigators must often faile, setting downe, as Rhodiginus observeth, suspected and ominous dayes, in every month, as the first and seventh of March, the fift and sixt of Aprill, the sixt, the twelfth and fifteenth of February. For the accounts hereof in these months are very different in our dayes, and were different with severall nations in Ages past; and yet how strictly soever the account be made, and even by the selfe same Calendar, yet is it possible that Navigators may be out. For so were the Hollanders, who passing Westward through *fretum le Mayre*, and compassing the Globe, upon their returne into their owne Countrey, found that they had lost a day. For if two men at the same time travell from the same place, the one Eastward, the other Westward round about the earth, and meet in the same place from whence they first set forth; it will so fall out, that he which hath moved Eastward against the diurnall motion of the Sun, by anticipating daylie something of its circle with his owne motion, will gaine one day; but he that travelleth Westward, with the motion of the Sun, by seconding its revolution, shall lose or come short a day; and therefore also upon these grounds that Delos was seated in the middle of the earth, it was no exact decision, because two Eagles let flye East and West by Jupiter, their meeting fell out just in the Island Delos.

Chap. V.

A Digression of the wisdome of God in the site and motion of the Sun.

HAving thus beheld the Ignorance of man in some things, his error and blindnesse in others; that is, in the measure of duration both of yeares and seasons, let us a while admire the Wisdome of God in this distinguisher of times, and visible Deity, as some have termed it, the Sun; which though some from its glory adore, and all for its benefits admire, we shall advance from other considerations, and such as illustrate the artifice of its Maker; nor doe wee thinke we can excuse the duty of our knowledge, if we onely bestow the flourish of Poetry hereon, or those commendatory conceits which popularly set forth the eminency

eminency of this creature, except we aſcend unto ſubtiler conſiderations, and ſuch as rightly underſtood, convinſively declare the wiſdome of the Creator, which ſince a Spaniſh Phyſition hath begun, wee will inlarge with our owne deductions; and this we ſhall endeavour from two conſiderations, that is, its proper ſituation, and wiſely ordered motion.

And firſt, we cannot paſſe over his providence in that it moveth at all; for, had it ſtood ſtill, and were it fixed like the earth, there had beene then no diſtinction of times, either of day or yeare, of Spring, of Autumne, of Summer, or of Winter; for theſe ſeaſons are defined by the motions of the Sun; when that approacheth neereſt us, wee call it Summer, when furtheſt off, Winter, when in the middle ſpaces, Spring or Autumne; whereas remaining in one place theſe diſtinctions had ceaſed, and conſequently the generation of all things depending on their viciſſitudes; making in one hemiſphere a perpetuall Summer, in the other a deplorable and comfortleſſe Winter, and thus had it alſo beene continuall day unto ſome, and perpetuall night unto others; for the day is defined by the abode of the Sun above the Horizon, and the night by its continuance below; ſo ſhould we have needed another Sun, one to illuſtrate our hemiſphere, a ſecond to enlighted the other, which inconvenience will enſue, in what ſite ſoever we place it, whether in the poles, or the Æquator, or betweene them both; no ſpherical body of what bigneſſe ſoever illuminating the whole ſphere of another, although it illuminate ſomething more then halfe of a leſſer, according unto the doctrine of the Opticks.

His wiſdome is againe diſcernable not onely in that it moveth at all, and in its bare motion, but wonderfull in contriving the line of its revolution; which from his artifice is ſo effected, that by a viciſſitude in one body and light, it ſufficeth the whole earth, affording thereby a poſſible or pleaſurable habitation in every part thereof; and that is the line Eclyptick, all which to effect by any other circle it had beene impoſſible. For firſt, if we imagine the Sun to make his courſe out of the Eclyptick, and upon a line without any obliquity, let it be conceaved within that Circle, that is, either on the Æquator, or elſe on either ſide (for, if we ſhould place it either in the Meridian or Colures, beſide the ſubverſion of its courſe from Eaſt to Weſt, there would enſue the like incommodities.) Now if we conceave the Sun to move betweene the obliquity of this Eclyptick in a line upon one ſide of the Æquator, then would the Sunne be viſible but unto one pole, that is, the ſame which was neareſt unto it. So that unto the one it would be perpetuall day, unto the other perpetuall night; the one would be oppreſſed with conſtant heate, the other with unſufferable cold; and ſo the defect of alternation would utterly impugne the generation of all things, which naturally require a viciſſitude of heate to their production, and no

leſſe to their encreaſe and conſervation.

But if we conceive it to move in the Æquator; firſt, unto a parallell ſphere, or ſuch as have the pole for their Zenith, it would have made neither perfect day nor night; for being in the Æquator it would interſect their Horizon, and be halfe above, and halfe beneath it; or rather it would have made perpetuall night to both: for though in regard of the rationall Horizon, which biſſecteth the Globe into equall parts, the Sunne in the Æquator would interſect the Horizon: yet in reſpect of the ſenſible Horizon (which is defined by the eye) the Sun would bee viſible unto neither. For if as ocular witneſſes report, and ſome doe alſo write, by reaſon of the connexity of the Earth the eye of man under the Æquator cannot diſcover both the poles, neither would the eye under the poles diſcover the Sunne in the Æquator. And thus would there nothing fructifie either neare or under them, the Sunne being Horizontall to the poles, and of no conſiderable altitude unto parts a reaſonable diſtance from them. Again, unto a right ſphere, or ſuch as dwell under the Æquator, although it made a difference in day and night, yet would it not make any diſtinction of ſeaſons: for unto them it would be conſtant Summer, it being alwayes verticall, and never declining from them: So had there been no fructification at all, and the Countries ſubjected would be as inhabitable, as indeed antiquity conceived them.

Laſtly, it moving thus upon the Æquator, unto what poſition ſoever, although it had made a day, yet could it have made no yeare; for it could not have had thoſe two motions now aſcribed unto it, that is, from Eaſt to Weſt, whereby it makes the day, and likewiſe from Weſt to Eaſt, whereby the yeare is computed: for according to Aſtronomy, the poles of the Æquator are the ſame with thoſe of the *Primum Mobile*. Now it is impoſſible that on the ſame circle, having the ſame poles, both theſe motions from oppoſite termes, ſhould be at the ſame time performed; all which is ſalved if we allow the Sunne an obliquity in his annuall motion, and conceive him to move upon the poles of the Zodiack, diſtant from theſe of the world 23 degrees and an halfe: And thus may we diſcerne the neceſſity of its obliquity, and how inconvenient its motion had been upon a circle parallell to the Æquator, or upon the Æquator it ſelfe.

Now with what providence this obliquity is determined, we ſhall evidently perceive upon the enſuing inconveniences from any deviation: for firſt, if its obliquity had been leſſe, as inſtead of twenty three degrees, twelve or the halfe thereof, the viciſſitude of ſeaſons appointed for the generation of all things, would ſurely have been too ſhort; for different ſeaſons would have hudled upon each other, and unto ſome it had not been much better then if it had moved on the Æquator: but had the obliquity been greater then now it is, as double or of 40.

degrees

degrees, ſeverall parts of the earth had not been able to endure the diſproportionable differences of ſeaſons, occaſioned by the great receſſe, and diſtance of the Sunne: for unto ſome habitations the Summer would have been extreme hot, and the Winter extreme cold; likewiſe the Summer temperate unto ſome, but exceſſive and in extremity unto others, as unto thoſe who ſhould dwell under the Tropicke of Cancer, as then would doe ſome part of Spaine, or ten degrees beyond, as Germany, and ſome part of England, who would have Summers as now the Moores of Africa; for the Sunne would ſometime be verticall unto them: but they would have Winters like thoſe beyond the Articke Circle, for in that ſeaſon the Sunne would be removed above 80 degrees from them. Againe, it would be temperate to ſome habitations in the Summer, but very extreme in the Winter; temperate to thoſe in two or three degrees beyond the Artick Circle, as now it is unto us; for they would be equidiſtant from that Tropick, even as we are from this at preſent; but the Winter would be extreme, the Sun being removed above an hundred degrees, and ſo conſequently would not be viſible in their Horizon; no poſition of ſphere diſcovering any ſtarre diſtant above 90 degrees, which is the diſtance of every Zenith from the Horizon. And thus if the obliquity of this Circle had been leſſe, the viciſſitude of ſeaſons had been ſo ſmall as not to be diſtinguiſhed; if greater, ſo large and diſproportionable as not to be endured.

Now for its ſituation, although it held this Eclypticke line, yet had it been ſeated in any other Orbe, inconveniences would enſue of condition like the former; for had it been placed in the loweſt ſphere, and where is now the Moone, the yeare would have conſiſted but of one moneth; for in that ſpace of time it would have paſſed through every every part of the Eclyptick, ſo would there have been no reaſonable diſtinction of ſeaſons required for the generation and fructifying of all things; contrary ſeaſons which deſtroy the effects of one another, ſo ſuddenly ſucceeding; beſides by this vicinity unto the earth its heat had been intollerable: for if (as many affirme) there is a different ſenſe of heat from the different points of its proper orbe, and that in the Apogeum or higheſt point (which happeneth in Cancer) it is not ſo hot under that Tropick, on this ſide the Æquator, as unto the other ſide in the Perigeum or loweſt part of the eccentric (which happeneth in Capricornus) ſurely being placed in an orbe farre lower, its heat would be unſufferable, nor needed we a fable to ſet the world on fire.

But had it been placed in the higheſt Orbe or that of the eight ſphere, there had been none but Platoes yeare, and a farre leſſe diſtinction of ſeaſons; for one yeare had then been many, and according unto the ſlow revolution of that orbe which abſolveth not his courſe in many thouſand years, no man had lived to attaine the account thereof. Theſe are the inconveniences enſuing upon its ſituation in the extreme orbes,

and

and had it been placed in the middle orbes of the Planets, there would have enſued abſurdities of a middle and participating nature.

Nor whether we adhere unto the hypotheſis of Copernicus, affirming the Earth to move, and the Sunne to ſtand ſtill; or whether wee hold as ſome of late have concluded from the ſpots in the Sun, which appeare and diſ-appeare againe; that beſides the revolution it maketh with its Orbes, it hath alſo a dineticall motion and rowles upon its owne poles; whether I ſay we affirme theſe or no, the illations before mentioned are not thereby infringed: we therefore conclude this contemplation, and are not afraid to believe, it may be literally ſaid of the wiſdome of God, what men will have figuratively ſpoken of the works of Chriſt, that if the wonders thereof were duly deſcribed, the whole world, that is all within the laſt circumference, would not containe them; for as his wiſdome is infinit, ſo cannot the due expreſſions thereof be finite, and if the world compriſe him not, neither can it comprehend the ſtory of him.

Chap. VI.

Concerning the vulgar opinion that the earth was ſlenderly peopled before the Floud.

Beſide the ſlender conſideration men of latter times doe hold of the firſt ages, it is commonly opinioned, and at firſt thought generally imagined, that the Earth was thinly inhabited, at leaſt not remotely planted before the Floud; ſo that ſome conceiving it needleſſe to bee univerſal, have made the deluge particular, and about thoſe parts where Noah built his Arke; which opinion becauſe it is not only injurious to the Text, humane hiſtory, and common reaſon, but alſo derogatory unto that great worke of God, the univerſall inundation, it will be needfull to make ſome farther Inquiſition; and (although predetermined by opinion) whether many might not ſuffer in the firſt Flood, as they ſhall in the laſt Flame, that is who knew not Adam nor his offence, and many periſh in the deluge, who never heard of Noah or the Arke of his preſervation.

Now for the true enquirie thereof, the meanes are as obſcure as the matter, which being naturally to be explored by Hiſtory humane or divine, receiveth thereby no ſmall addition of obſcurity: for as for humane relations, they are ſo fabulous in Deucalions floud, that they are of little credit about Ogyges & Noah's; for the Heathens (as Varro accounteth) make three diſtinctions of time: the firſt from the beginning of the World unto the generall Deluge of Ogyges they terme, *adelon*; that is a time not much unlike that which was before time, immaniſeſt and unknowne, becauſe thereof there is almoſt nothing or very

very obſcurely delivered: for though divers Authors have made ſome mention of the Deluge, as Manethon the Ægyptian Prieſt, *Zenophon de æquivocis Fabius Pictor de Aureo ſeculo, Mar. Cato de originibus*, and Archilochus the Greek, who introduceth alſo the teſtimony of Moſes in his fragment *de temporibus*: yet have they delivered no account of what preceded or went before it. Joſephus I confeſſe in his Diſcourſe againſt Appion induceth the antiquity of the Jewes unto the floud, and before, from the teſtimony of humane Writers; inſiſting eſpecially upon Máſeas of Damaſcus, Jeronymus Ægyptius, and Beroſus; and confirming the long duration of their lives, not only from theſe, but the authority of Heſiod, Erathius, Hellanicus and Ageſilaus. Beroſus the Chaldean Prieſt, writes moſt plainly mentioning the City of Enos, the name of Noah and his ſonnes, the building of the Arke, and alſo the place of its landing. And Diodorus Siculus hath in his third booka paſſage which examined advanceth as high as Adam; for the Chaldeans, ſaith he, derive the originall of their Aſtronomy and letters forty three thouſand yeares before the Monarchy of Alexander the Great; now the yeares whereby they computed the antiquity of their letters being as Xenophon interprets to be accounted Lunary, the compute will ariſe unto the time of Adam: for forty three thouſand Lunary years make about three thouſand ſix hundred thirty foure yeares, which anſwereth the Chronologie of time from the beginning of the world unto the reigne of Alexander, as Annius of Viterbo computeth in his Comment upon Beroſus.

The ſecond ſpace or intervall of time is accounted from the Floud unto the firſt Olympiade, that is the yeare of the world 3174. which extendeth unto the dayes of Iſaiah the Prophet, and ſome twenty years before the foundation of Rome; this they terme mythicon or fabulous, becauſe the account thereof eſpecially of the firſt part is fabulouſly or imperfectly delivered: hereof ſome things have been briefly related by the Authors above mentioned; more particularly by Dares Phrygius, Dictys Cretenſis, Herodotus, Diodorus Siculus, and Trogus Pompeius; the moſt famous Greek Poets lived alſo in this Intervall, as Orpheus, Linus, Muſæus, Homer, Heſiod; and herein are comprehended the grounds and firſt inventions of Poeticall fables, which were alſo taken up by hiſtoricall Writers, perturbing the Chaldean and Ægyptian Records with fabulous additions, and confounding their names and ſtories, with their owne inventions.

The third time ſucceeding untill their preſent ages, they terme hiſtoricon, that is ſuch wherein matters have been more truly hiſtorified, and may therefore be beleeved. Of theſe times alſo have written Herodotus, Thucydides, Xenophon, Diodorus, and both of theſe and the other preceding ſuch as have delivered univerſall Hiſtories or Chronologies; as to omit Philo, whoſe Narrations concern the He-

brews,

brewes, Euſebius, Julius Africanus, Oroſius, Ado of Vienna, Marianus Scotus, *Hiſtoria tripartita*, *Vrſpergenſis*, Carion, Pineda, Salian, and with us Sir Walter Raleigh.

Now from the firſt hereof that moſt concerneth us, wee have little or no aſſiſtance, the fragments and broken records hereof inforcing not at all our purpoſe; and although ſome things not uſually obſerved, may be from thence collected, yet doe they not advantage our diſcourſe, nor any way make evident the point in hand: For the ſecond, though it directly concernes us not, yet in regard of our laſt medium and ſome illuſtrations therein, we ſhall be conſtrained to make ſome uſe thereof. As for the laſt it concernes us not at all, for treating of times far below us, it can no way advantage us; and though diverſe in this laſt Age have alſo written of the firſt, as all that have delivered the generall accounts of time, yet are their Tractates little auxiliary unto ours, nor afford us any light to detenebrate and cleare this truth.

As for holy Scripture and divine relation, there may alſo ſeeme therein but ſlender information, there being onely left a briefe narration hereof by Moſes, and ſuch as afford no poſitive determination. For the text delivereth but two genealogies, that is, of Cain and Seth; in the line of Seth there are onely ten deſcents, in that of Cain but ſeven, and thoſe in a right line with mention of father and ſonne, excepting that of Lamech, where is alſo mention of wives, ſons, and a daughter: notwithſtanding if we ſhall ſeriouſly conſider what is delivered therein, and what is alſo deducible, it will be probably declared what is by us intended, that is, the populous and ample habitation of the earth before the floud, which wee ſhall labour to induce not from poſtulates and entreated Maximes, but undeniable principles declared in holy Scripture, that is, the length of mens lives before the floud, and the large extent of time from the creation thereunto.

We ſhall onely firſt crave notice, that although in the relation of Moſes there be very few perſons mentioned, yet are there many more to be preſumed; nor when the Scripture in the line of Seth nominats but ten perſons, are they to be conceaved all that were of this generation; the Scripture ſingly delivering the holy line, wherein the world was to be preſerved, firſt in Noah, and afterward in our Saviour. For in this line it is manifeſt there were many more borne then are named; for it is ſaid of them all, that they begat ſons and daughters. And whereas it is very late before it is ſaid they begat thoſe perſons which are named in the Scripture, the ſooneſt at 65. it muſt not be underſtood that they had none before, but not any in whom it pleaſed God the holy line ſhould be continued. And although that expreſſion that they begat ſons and daughters be not determined to be, before or after the mention of theſe, yet muſt it be before in ſome; for before it is ſaid that Adam begat Seth at the 130. yeare, it is plainly affirmed that Cain knew

knew his wife, and had a ſon, which muſt be one of the daughters of Adam, one of thoſe whereof it is after ſaid, hee begat ſons and daughters. And ſo for ought can be diſproved there might be more perſons upon earth then are commonly ſuppoſed, when Cain ſlew Abel, nor the fact ſo hainouſly to be aggravated in the circumſtance of the fourth perſon living. And whereas it is ſaid upon the nativity of Seth, God hath appointed me another ſeed inſtead of Abel, it doth not imply he had no other all this while, but not any of that expectation, or appointed (as his name implies) to make a progreſſion in the holy line, in whom the world was to be ſaved, and from whom he ſhould be borne, that was myſtically ſlaine in Abel.

Now our firſt ground to induce the numeroſity of people before the floud, is the long duration of their lives beyond 7. 8. and 9. hundred yeares, which how it conduceth unto populoſity wee ſhall make but little doubt, if we conſider there are two maine cauſes of numeroſity in any kind or ſpecies, that is, a frequent and multiparous way of breeding, whereby they fill the world with others, though they exiſt not long themſelves; or a long duration and ſubſiſtence, whereby they doe not onely repleniſh the world with a new annumeration of others, but alſo maintaine the former account in themſelves. From the firſt cauſe we may obſerve examples in creatures oviparous, as birds and fiſhes; in vermiparous, as Flies, Locuſts, and Gnats; in animals alſo viviparous, as Swine and Conies; of the firſt there is a great example in the heard of Swine in Galilee, although it were an uncleane beaſt, and forbidden unto the Jews. Of the other a very remarkable one in Atheneus, in the Iſle Aſtipalea, one of the Cyclades now called Stampalia, wherein from two that were imported, the number ſo encreaſed, that the Inhabitants were conſtrained to have recourſe unto the Oracle of Delphos, for an invention how to deſtroy them.

Others there are which make good the paucity of their breed with the length and duration of their dayes, whereof there want not examples in animals uniparous: Firſt, in biſulcous or cloven hooft, as Camels, and Beeves, whereof there is above a million annually ſlaine in England: It is alſo ſaid of Job, that he had a thouſand yoake of Oxen, and ſix thouſand Camels; and of the children of Iſrael paſſing into the land of Canaan, that they tooke from the Midianites threeſcore and ten thouſand Beeves; and of the Army of Semiramis, that there were therein 100000. Camels; for Solipes, or firme hoofed creatures, as Horſes, Aſſes, Mules, &c. they are alſo in mighty numbers; ſo is it delivered that Job had a thouſand ſhe Aſſes: that the Midianites loſt 61000. Aſſes: for horſes it is affirmed by Diodorus, that Ninus brought againſt the Bactrians 280000. horſes; after him Semiramis 500000. horſes, and Chariots 100000. even in creatures ſterill and ſuch as do not generate, the length of life conduceth much unto the multiplicity of the

ſpecies; for the number of Mules which live farre longer then their Dammes or Sires, in countries where they are bred is very remarkable, and farre more common then horſes.

For animals multifidous, or ſuch as are digitated or have ſeverall diviſions in their feete, there are but two that are uniparous, that is, Men and Elephants; in whom though their generations be but ſingle, they are notwithſtanding very numerous. The Elephant (as Ariſtotle affirmeth) carryeth the young two yeares and conceaveth not againe (as *Edvardus Lopez* affirmeth) in many after; yet doth their age requite this diſadvantage, they living commonly one hundred, ſometime two hundred yeares. Now although they be unuſuall with us in Europe, and altogether unknowne unto America, yet in the two other parts they are abundant, as evidently appeares by the relation of *Gorcias ab Horto*, Phyſitian to the Viceroy at Goa; who in his Chapter *de Ebore*, relates that at one venation the King of Sian tooke foure thouſand, and is of opinion they are in other parts, in greater number then heards of Beeves in Europe. And though this delivered from a Spaniard unacquainted with our Northerne droves, may ſeeme very farre to exceed, yet muſt we conceave them very numerous, if wee conſider the number of teeth tranſported from one Countrey to another, they having onely two great teeth, and thoſe not falling or renewing.

As for man the diſadvantage in his ſingle iſſue is the ſame with theſe, and in the lateneſſe of his generation ſomewhat greater then any; yet in the continuall and not interrupted time thereof, and the extent of dayes, he becomes at preſent, if not then any other ſpecies, at leaſt more numerous then theſe before mentioned. Now being thus numerous at preſent, and in the meaſure of threeſcore, foureſcore or an hundred years, if their dayes extended unto ſixe, ſeven, or eight hundred, their generations would be proportionably multiplied; their times of generation being not onely multiplyed, but their ſubſiſtence continued; for though the great Grandchild went on, the Tycho or firſt Originall would ſubſiſt and make one of the world, though he outlived all the termes of conſanguinity, and became a ſtranger unto his proper progeny. So by compute of Scripture Adam lived unto the ninth generation, unto the dayes of Lamech the father of Noah; Methuſelah unto the yeare of the floud, and Noah was contemporary unto all from Enoch unto Abraham. So that although ſome dyed, the father beholding ſo many diſcents, the number of ſurvivers muſt ſtill be very great; for if halfe the men were now alive, which lived in the laſt Century, the earth would ſcarce containe their number; whereas in our abridged and ſeptuageſimall ages, it is very rare and deſerves a diſtich to behold the fourth generation: Xerxes complaint ſtill remaining, and what he lamented in his Army, being almoſt deplorable in the whole world, men ſeldome ariving unto thoſe yeares whereby Methuſelah exceeded

nine

nine hundred, and what Adam came ſhort of a thouſand, was defined long agoe to be the age of man.

Now although the length of dayes conduceth mainely unto the numeroſity of mankinde, and it be manifeſt from Scripture they lived very long, yet is not the period of their lives determinable, and ſome might be longer livers, then we account that any were; For, (to omit that conceit of ſome, that Adam was the oldeſt man, in as much as he is conceaved to be created in the maturity of mankinde, that is, at 60. (for in that age it is ſet downe they begat children) ſo that adding this number unto his 930. he was 21. yeares older then any of his poſterity) that even Methuſelah was the longeſt lived of all the children of Adam, we need not grant, nor is it definitively ſet downe by Moſes: Indeed of thoſe ten mentioned in Scripture with their ſeverall ages it muſt be true; but whether thoſe ſeven of the line of Caine and their progeny, or any of the ſons or daughters poſterity after them outlived thoſe, is not expreſſed in holy Scripture; and it will ſeeme more probable that of the line of Caine, ſome were longer lived then any of Seth, if we concede that ſeven generations of the one lived as long as nine of the other. As for what is commonly alledged, that God would not permit the life of any unto a thouſand, becauſe (alluding unto that of David) no man ſhould live one day in the ſight of the Lord, although it be urged by divers, yet is it me thinks an inference ſomewhat Rabbinicall, and not of power to perſwade a ſerious examinator.

Having thus made manifeſt in generall how powerfully the length of lives conduced unto populoſity of thoſe times; it will yet be eaſier acknowledged if we diſcend to particularities, and conſider how many in ſeven hundred yeares might diſcend from one man; wherein conſidering the length of their dayes, we may conceave the greateſt number to have beene alive together. And this that no reaſonable ſpirit may contradict, wee will declare with manifeſt diſadvantage; for whereas the duration of the world unto the floud was above 1600. yeares, we will make our compute in leſſe then halfe that time; nor will we begin with the firſt man, but allow the earth to bee provided of women fit for marriage the ſecond or third firſt Centuries; and will onely take as granted, that they might beget children at ſixty, and at an hundred yeares have twenty, allowing for that number forty yeares. Nor will we herein ſingle out Methuſelah, or account from the longeſt livers, but make choice of the ſhorteſt of any wee finde recorded in the Text, excepting Enoch; who after hee had lived as many yeares as there be dayes in the yeare, was tranſlated at 365. And thus from one ſtock of ſeven hundred yeares, multiplying ſtill by twenty, we ſhall finde the product to be one thouſand, three hundred forty ſeven millions, three hundred ſixty eight thouſand, foure hundred and twenty.

Centuries	1	20.
	2	400.
	3	800.
	4	160,000.
	5	3,200,000.
	6	46,000,000.
	7	1,280,000,000.
The product		1,347,368,420

Now had wee computed by Methuselah the summe had exceeded five hundred thousand millions; as large a number from one stock as may bee conceaved in Europe; especially if in Constantinople the greatest City thereof, there be no more then Botero accounteth, seven hundred thousand soules, which duely considered, wee shall rather admire how the earth contained its inhabitants, then doubt its inhabitation; and might conceave the Deluge not simply penall, but in some way also necessary; as many have conceaved of translations, if Adam had not sinned, and the race of man had remained upon earth immortall.

Now whereas some to make good their longevity, have imagined that the yeares of their compute were Lunary; unto these we must reply; That if by a lunary yeare they understand twelve revolutions of the Moone, that is, 354. dayes, eleven fewer then in the Solary yeare; there will be no great difference, at least not sufficient to convince or extenuate the question: But if by a Lunary yeare they meane one revolution of the Moone, that is, a month; they first introduce a yeare never used by the Hebrewes in their Civill accompts; and what is delivered before of the Chaldean yeares, (as Xenophon gives a caution) was onely receaved in the Chronology of their Arts. Secondly, they contradict the Scripture, which makes a plaine enumeration of many months in the account of the Deluge, for so it is expressed in the Text. In the tenth month, in the first day of the month were the tops of the mountaines seene; Concordant whereunto is the relation of humane Authors, for so saith Xenophon *de Æquivocis*, *Inundationes plures fuere, prima novimestris inundatio terrarum sub prisco Ogyge*; and the like also Solinus, *Meminisse hoc loco par est post primum diluvium Ogygi temporibus notatum, cum novem & amplius mensibus diem continua nox inumbrasset, Delon ante omnes terras radiis solis illuminatum sortitumque ex eo nomen.* And lastly, they fall upon an absurdity, for they make Enoch to beget children about six yeares of age; for whereas it is said he begat Methuselah at 65. if we shall account every month a yeare, he was at that time some sixe yeares and an halfe, for so many months are contained in that space of time.

Having thus declared how much the length of mens lives conduced unto the populosity of their kinde, our second foundation must be the large extent of time, from the Creation unto the Deluge; that is, according

cording unto received computes about 1655 yeares) a longer time then hath passed since the nativity of our Saviour; and which we cannot but conceive sufficient for a very large encrease; if we do but affirm what reasonable enquirers will not deny; That the earth might be as populous in that number of yeares before the Flood, as we can manifest it was in the same number after. And whereas there may be conceived some disadvantage, in regard that at the Creation, the originall of mankinde was in two persons, but after the Flood their propagation issued at least from sixe; against this we might very well set the length of their lives before the Flood, which were abreviated after, and in halfe this space contracted into hundreds and threescores. Notwithstanding to equalize accounts, we will allow three hundred yeares, and so long a time as we can manifest from the Scripture, There were foure men at least that begat children, Adam, Cain, Seth, and Enos; so shall wee fairly and favourably proceed if we affirme the world to have been as populous in sixteen hundred and fifty yeares before the Flood, as it was in thirteen hundred after. Now how populous and largely inhabited it was within this period of time; we shall endeavour to declare from probabilities, and severall testimonies of Scripture and humane Authors.

And first, to manifest the same neere those parts of the Earth where the Arke is presumed to have rested, wee have the relation of holy Scripture accounting the genealogie of Japhet, Cham and Sem, and in this last, foure descents unto the division of the earth in the dayes of Peleg, which time although it were not upon common compute much above an hundred yeares, yet were they at this time mightily encreased; nor can we well conceive it otherwise, if we consider they began already to wander from their first habitation, and were able to attempt so mighty a worke as the building of a City and a Tower, whose top should reach unto the heavens, whereunto there was required no slender number of persons, if we consider the magnitude thereof, expressed by some, & conceived to be *Turris Beli* in Herodotus; and the multitudes of people recorded at the erecting of the like or inferiour structures: for so is it delivered in the Book of Kings, that at the building of Solomons Temple there were threescore and ten thousand that carryed burdens, and fourscore thousand hewers in the mountaines, beside the chiefe of his officers three thousand and three hundred; and at the erecting of the Pyramids in the reigne of King Cheops, as Herodotus reports there were *decem* myriades, that is an hundred thousand men. And though it be said of the Ægyptians, *Porrum & cæpe nefas violare & frangere morsu*; yet did the summes expended in Garlicke and Onyons amount unto no lesse then one thousand six hundred Talents.

The first Monarchy or Kingdome of Babylon is mentioned in Scripture under the foundation of Nimrod, which is also recorded in humane

mane hiſtory; as beſide Beroſus, in Diodorus and Juſtine, for Nimrod of the Scriptures is Belus of the Gentiles, and Aſſur the ſame with Ninus his ſucceſſour. There is alſo mention of divers Cities, particularly of Ninivy and Reſen expreſſed emphatically in the Text to be a great City.

That other Countries round about were alſo peopled, appeares by the Wars of the Monarchs of Aſſyria with the Bactrians, Indians, Scythyans, Æthiopians, Armenians, Hyrcanians, Parthians, Perſians, Suſians; they vanquiſhing (as Diodorus relateth) Ægypt, Syria, and all Aſia minor, even from Boſphorus unto Tanais. And it is ſaid, that Semiramis in her expedition againſt the Indians, brought along with her the King of Arabia. About the ſame time of the Aſſyrian Monarchy, do Authors place that of the Sycionians in Greece, and ſoone after, that of the Argives, and not very long after, that of the Athenians under Cecrops; and within our period aſſumed are hyſtorified many memorable actions of the Greekes, as the expedition of the Argonautes, with the moſt famous Wars of Thebes and Troy.

That Canaan alſo and Ægypt were well peopled farre within this period, beſides their plantation by Canaan and Miſraim, appeareth from the hiſtory of Abraham, who in leſſe then 400 yeares after the Flood journied from Meſopotamia unto Canaan and Ægypt; both which he found well peopled and policied into Kingdomes; wherein alſo in 430 yeares, from threeſcore and ten perſons which came with Jacob into Ægypt he became a mighty Nation: for it is ſaid, at their departure, there journyed from Rhameſis to Succoth about ſix hundred thouſand on foot, that were men beſides children. Now how populous the land from whence they came was, may be collected not only from their ability in commanding ſo mighty ſubjections, but from the ſeverall accounts of that Kingdome delivered by Herodotus; and how ſoone it was peopled is evidenced from the pillar of their King Oſyris, with this inſcription in Diodorus; *Mihi pater eſt Saturnus deorum junior; ſum vero Oſyris rex qui totum peragravi orbem uſq; ad Indorum fines, ad eos quoq; ſum profectus qui ſeptentrioni ſubjacent uſq; ad Iſtri fontes, & alias partes uſq; ad Oceanum.* Now according unto the beſt determinations Oſyris was Mizraim, & Saturnus Ægyptius, the ſame with Cham, after whoſe name Ægypt is not only called in Scipture the land of Ham, but thus much is alſo teſtified by Plutarch; for in his Treatiſe *de Oſyride*, he delivereth that Ægypt was called *Chamia a Chamo Noe filio*, that is from Cham the ſonne of Noah. And if according to the conſent of ancient Fathers, Adam was buried in the ſame place, where Chriſt was crucified, that is Mount Calvary, the firſt man ranged farre before the Flood, and laid his bones many miles from that place, where its preſumed he received them: And this migration was the greater, if as the Text expreſſeth, he was caſt out of the Eaſt-ſide of

Paradiſe

Paradiſe to till the ground, and as the Poſition of the Cherubins implyeth, who were placed at the Eaſt end of the garden, to keep him from the tree of life.

That the extream and remote parts of the earth were in this time inhabited, is alſo inducеable from the like Teſtimonies; for (omitting the numeration of Joſephus, and the genealogies of the ſonnes of Noah) that Italy was inhabited appeareth from the Records of Livie, and Dionyſius Halicarnaſſeus, the ſtory of Ænæas, Evander, and Janus, whom Annius of Viterbo, and the Chorographers of Italy, do make to be the ſame with Noah: that Sicily was alſo peopled, is made out from the frequent mention thereof in Homer, the Records of Diodorus and others; but eſpecially from a remarkable paſſage touched by Aretius and Rauzanus Biſhop of Lucerium, but fully explained by Thomas Fazelli in his accurate hiſtory of Sicily; that is, from an ancient inſcription in a ſtone at Panormo, expreſſed by him in its proper characters, and by a Syrian thus tranſlated: *Non eſt alius Deus præter unum Deum, non eſt alius potens præter eundem Deum, neque eſt alius victor præter eundem quem colimus Deum: Hujus turris præfectus eſt Sapha filius Eliphar, filii Eſau, fratris Iacob, filii Iſaac, filii Abraham; & turri quidem ipſi nomen eſt Baych, ſed turri huic proximæ nomen eſt Pharath.* The antiquity of the inhabitation of Spaine is alſo confirmable, not onely from Beroſus in the plantation of Tuball and a City continuing yet in his name, but the ſtory of Gerion, the travells of Hercules and his pillars, and eſpecially a paſſage in Strabo, which advanceth unto the time of Ninus, thus delivered in his fourth Booke. The Spaniards (ſaith he) affirme that they have had laws and letters above ſixe thouſand yeares. Now the Spaniards or Iberians obſerving (as Xenophon hath delivered) *Annum quadrimeſtrem*, foure months unto a yeare, this compute will make up 2000 Solary yeares, which is about the ſpace of time from Strabo who lived in the dayes of Auguſtus, unto the reigne of Ninus.

That Mauritania and the coaſt of Africa were peopled very ſoon, is the conjecture of many wiſe men, & that by the Phæniceans, who left their Country upon the invaſion of Canaan by the Iſraelites: for beſide the conformity of the punicke or Carthaginean language with that of Phænicea, there is a pregnant and very remarkable teſtimony hereof in Procopius, who in his ſecond *de bello Vandalico*, recordeth, that in a Towne of Mauritania Tingitana, there was to be ſeen upon two white Columns in the Phænicean language theſe enſuing words; *Nos Maurici ſumus qui fugimus à facie Iehoſchuæ filii Nunis prædatoris.* The fortunate Iſlands or Canaries were not unknowne; for ſo doth Strabo interpret that ſpeech in Homer of Proteus unto Menelaus——

Sed te qua terræ poſtremus terminus extat,
Elyſium in Campum cæleſtia numina dabunt.

The

The like might we affirme from credible hiſtories both of France and Germany, and probably alſo out of our owne Country; for omitting the fabulous and Trojan originall delivered by Jeofrey of Monmouth, and the expreſſe text of Scripture, that the race of Japhet did people the Iſles of the Gentiles; (in which number this of ours hath beene ſpecially accounted) their originall was ſo obſcure in Cæſars time, that he affirmeth the Inland inhabitants were Aborigines, that is, ſuch as reported, that they had their beginning in the Iſland; That Ireland our neighbour Iſland was not long time without Inhabitants, may be made probable by ſundry accounts, although we abate the Tradition of Bartholanus the Scythian, who arrived there three hundred years after the Flood, or the relation of Giraldus, that Cæſaria the daughter of Noah dwelt there before.

Thus though we have declared how largely the world was inhabited within the ſpace of 1300 years, yet muſt it be conceived more populous then can be evinced; for a greater part of the Earth hath ever been peopled, then hath been known or deſcribed by Geographers, as will appeare by the diſcoveries of all ages; for neither in Herodotus or Thucydides do we finde any mention of Rome, nor in Ptolomy of many parts of Europe, Aſia, or Africa: and becauſe many places wee have declared of long plantation, of whoſe populoſity notwithſtanding or memorable actions we have no ancient ſtory, if we may conjecture of theſe by what we finde related of others, wee ſhall not need many words, nor aſſume the halfe 1300 yeares, and this we might illuſtrate from the mighty acts of the Aſſyrians performed not long after the Flood, and recorded by Juſtine and Diodorus, who makes relation of expeditions by Armies more numerous then have beene ever ſince. For Ninus King of Aſſyria brought againſt the Bactrians 700000 foot, 200000 horſe, 10600 Chariots; Semiramis his ſucceſſor led againſt the Indians 1300000 foot, 500000 horſe, 100000 Chariots, and as many upon Camells: And it is ſaid, Staurobates the Indian King met her with greater force then ſhe brought againſt him; all which was performed within leſſe then foure hundred yeares after the Flood.

Now if any man imagine the unity of their language did hinder their diſperſion before the Flood, we confeſſe it ſome hindrance at firſt, but not much afterward: for though it might reſtraine their diſperſion, it could not their populoſity, which neceſſarily requireth tranſmigration & emiſſion of Colonies, as we read of Romanes, Greeks, Phæniceans in ages paſt, and have beheld examples thereof in our dayes; and we may alſo obſerve that after the Flood before the confuſion of tongues, men began to diſperſe; for it is ſaid, they journied towards the Eaſt, and the Scripture it ſelfe expreſſeth a neceſſity conceived of their diſperſion, for the intent of erecting the Tower is ſo delivered in the text, leſt we be ſcattered abroad upon the face of the earth.

Againe,

Againe, if any man imagine the plantation of the earth more easie in regard of Navigation and shipping discovered since the Flood, whereby the Islands and devided parts of the earth are now inhabited; hee must consider that whether there were Islands or no before the Flood is not yet determined, and is with probability denyed by very learned Authors.

Lastly, if we shall fall into apprehension that it was lesse inhabited, because it is said in the sixt of Genesis about 120. yeares before the Flood, and it came to passe that when men began to multiply upon the face of the earth: Beside that this may be onely meant of the race of Cain, it will not import they were not multiplyed before, but that they were at that time plentifully encreased; for so is the same word used in other parts of Scripture. And so is it afterward in the 9. Chap. said that Noah began to be an husbandman, that is, he was so, or earnestly performed the Acts thereof: so it is said of our Saviour that he began to cast them out that bought and sold in the Temple; that is, he actually cast them out, or with alacrity effected it.

And thus have I declared my private and probable conceptions in the enquiry of this truth; but the certainty hereof let the Arithmeticke of the last day determine, and therefore expect no further beliefe then probability and reason induce; onely desire men would not swallow dubiosities for certainties, and receive as principles, points mainly controvertible, for we are to adhere unto things doubtfull in a dubious and opinative way; it being reasonable for every man to vary his opinion according to the variance of his reason, and to affirme one day what he denyed another, wherein although at last we misse of truth, wee dye notwithstanding in harmelesse and inoffensive errors, because we adhere unto that whereunto the examen of our reasons, and honest enquiries induce us.

Chap. VII.

Of East and West.

THe next shall be of East and West; that is, the proprieties and conditions ascribed unto Regions respectively unto those situations, which hath been the obvious conception of Philosophers and Geographers, magnifying the condition of India, and the Easterne Countries, above the setting and occidentall Climates; some ascribing hereto the generation of gold, pretious stones, and spices, others the civility and naturall endowments of men; conceiving the bodies of this situation to receive a speciall impression from the first salutes of the Sunne, and some appropriate influence from his ascendent and orientall radiations. But these proprieties affixed unto bodies, upon considera-

tions deduced from East, West, or those observable points of the sphere, how specious and plausible soever, will not upon enquiry bee justified from such foundations.

For, to speake strictly, there is no East and West in nature; nor are those absolute and invariable, but respective and mutable points, according unto different longitudes, or distant parts of habitation, whereby they suffer many and considerable variations. For first, unto some, the same part will be East or West in respect of one another, that is, unto such as inhabit the same parallel, or differently dwel from East to West; Thus as unto Spaine, Italy lyeth East, unto Italy, Greece, unto Greece Persia, & unto Persia China; so again unto the Country of China, Persia lyeth West, unto Persia Greece, unto Greece Italy, and unto Italy Spaine; so that the same Country is sometimes East and sometimes West, and Persia though East unto Greece, yet is it West unto China.

Unto other habitations the same point will be both East and West, as unto those that are Antipodes or seated in points of the Globe diametrically opposed; so the Americans are Antipodall unto the Indians, and some part of India is both East and West unto America, according as it shall be regarded from one side or the other, to the right or to the left; and setting out from any middle point, either by East or West, the distance unto the place intended is equall, and in the same space of time in nature also performable.

To a third that have the Poles for their vertex, or dwell in the position of a parallell sphere, there will be neither East nor West, at least the greatest part of the year; for if (as the name Orientall implyeth) they shall account that part to be East where ever the Sunne ariseth, or that West where the Sunne is occidentall or setteth, almost halfe the yeare they have neither the one nor the other; for halfe the yeare it is below their Horizon, and the other halfe it is continually above it; and circling round about them intersecteth not the Horizon, nor leaveth any part for this compute. And if (which will at first seem very reasonable) that part should be tearmed the Easterne point, where the Sunne at the Æquinox, and but once in the yeare ariseth, yet will this also disturbe the Cardinall accounts, nor will it with propriety admit that appellation: For that surely cannot be accounted East which hath the South on both sides, which notwithstanding, this position must have; for if unto such as live under the pole, that be only North which is above them, that must be Southerly which is below them, which is all the other portion of the Globe beside that part possessed by them. And thus these points of East and West being not absolute in any, respective in some, and not at all relating unto others, we cannot hereon establish so generall considerations, nor reasonably erect such immutable assertions, upon so unstable foundations.

Now the ground that begat or promoted this conceit, was first a mistake

miſtake in the apprehenſion of Eaſt and Weſt, conſidering thereof as of the North and South, and computing by theſe as invariably as by the other; but herein, upon ſecond thoughts there is a great diſparity: For the North and Southerne pole, are the invariable termes of that Axis whereon the heavens doe move, and are therefore incommunicable and fixed points whereof the one is not apprehenſible in the other; but with the Eaſt and Weſt it is quite otherwiſe, for the revolution of the Orbes being made upon the poles of North and South, all other points about the Axis are mutable; and whereſoever therein the Eaſt point be determined, by ſucceſſion of parts in one revolution every point becommeth Eaſt: and ſo if where the Sunne ariſeth, that part be tearmed Eaſt, every habitation differing in longitude, will have this point alſo different, in as much as the Sunne ſucceſſively ariſeth unto every one.

The ſecond ground, although it depend upon the former, approacheth nearer the effect; and that is the efficacie of the Sunne, ſet out and divided according to priority of aſſent, whereby his influence is conceived more favourable unto one Country then another, and to felicitate India more then any after. But hereby we cannot avoid abſurdities and ſuch as infer effects controulable by our ſenſes: For firſt, by the ſame reaſon that we affirm the Indian richer then the American, the American will alſo be more plentifull then the Indian, and England or Spaine more fruitfull then Hiſpaniola or golden Caſtile; in as much as the Sunne ariſeth unto the one ſooner then the other, and ſo accountably unto any Nation ſubjected unto the ſame parallell, or with a conſiderable diverſity of longitude from each other.

Secondly, an unſufferable abſurdity will enſue; for thereby a Country may be more fruitfull then it ſelfe: For India is more fertile then Spaine, becauſe more Eaſt, and that the Sunne ariſeth firſt unto it; Spaine likewiſe by the ſame reaſon more fruitfull then America, and America then India; ſo that Spaine is leſſe fruitfull then that Country, which a leſſe fertile Country then it ſelfe, excelleth.

Laſtly, if we conceive the Sunne hath any advantage by the priority of its aſcent, or makes thereby one Country more happy then another; we introduce injuſtifiable acceptions; and impoſe a naturall partiality on that luminary, which being equidiſtant from the Earth, and equally removed in the Eaſt as in the Weſt, his power and efficacie in both places muſt bee equall, as Boetius hath taken notice in his firſt *de Gemmis*, and Scaliger hath graphically declared in his Exercitations; ſome have therefore forſaken this refuge of the Sunne, and to ſalve the effect have recurred unto the influence of the ſtarres, making their activities Nationall, and appropriating their powers unto particular regions: So Cardan conceiveth the tayle of Urſa major peculiarly reſpecteth Europe, whereas indeed once in 24

houres it alſo abſolveth its courſe over Aſia and America : And therefore it will not be eaſie to apprehend thoſe ſtars peculiarly glance on us, who muſt of neceſſity carry a common eye and regard unto all Countries unto whom their revolution and verticity is alſo common.

The effects therefore are different productions in ſeverall Countries, which we impute unto the action of the Sunne, muſt ſurely have nearer and more immediate cauſes then that Luminary; and theſe if wee place in the propriety of the clime, or condition of ſoyle wherein they are produced, we ſhall more reaſonably proceed, then they who aſcribe them unto the activity of the Sunne, whoſe revolution being regular, it hath no power nor efficacie peculiar from its orientality, but equally diſperſeth his beames unto all which equally and in the ſame reſtriction receive his luſtre; and being an univerſall and indefinite agent, the effects or productions we behold, receive not their circle from his cauſality, but are determined by the principles of the place or qualities of that region which admits them: and this is evident not onely in gemmes, mineralls, and metalls, but obſervable in plants and animalls, whereof ſome are common unto many Countries, ſome peculiar unto one, ſome not communicable unto another : For the hand of God that firſt created the earth, hath with variety diſpoſed the principles of all things, wiſely contriving them in their proper ſeminaries, and where they beſt maintaine the intention of their ſpecies; whereof if they have not a concurrence, and be not lodged in a convenient matrix, they are not excited by the efficacie of the Sunne, or fayling in particular cauſes receive a reliefe or ſufficient promotion from the univerſall. For although ſuperiour powers cooperate with inferiour activities, and may (as ſome conceive) carry a ſtroake in the plaſticke and formative draught of all things, yet doe their determinations belong unto particular agents, and are defined from their proper principles. Thus the Sunne which with us is fruitfull in the generation of frogs, toads, and ſerpents, to this effect proves impotent in our neighbour Iſland; wherein as in all other carrying a common aſpect, it concurreth but unto prediſpoſed effects, and onely ſuſcitates thoſe formes, whoſe determinations are ſeminall, and proceed from the Idea of themſelves.

Now wheras there be many obſervations concerning Eaſt, and divers conſiderations of Art which ſeeme to extoll the quality of that point, if rightly underſtood they doe not really promote it. That the Aſtrologer takes account of nativities from the Aſcendent, that is, the firſt houſe of the heavens, whoſe beginning is toward the Eaſt, it doth not advantage the conceit; for, he eſtabliſheth not his Judgement upon the Orientality thereof, but conſidereth therein his firſt aſcent above the Horizon; at which time its efficacy becomes obſervable, and is conceaved to have the ſignification of life, and to reſpect the condition

of

of all things, which at the same time arise from their causes, and ascend to their Horizon with it. Now this ascension indeed falls out respectively in the East; but as we have delivered before, in some positions there is no Easterne point from whence to compute these ascensions. So is it in a parallel spheare: for, unto them six houses are continually depressed, and six never elevated; and the Planets themselves, whose revolutions are of more speed, and influences of higher consideration, must finde in that place a very imperfect regard; for halfe their period they absolve above, and halfe beneath the Horizon; and so for six yeares, no man can have the happinesse to be borne under Jupiter, and for fifteene together all must escape the ascendent dominion of Saturne.

That Aristotle in his Politicks, commends the situation of a City which is open towards the East, and admitteth the rayes of the rising Sun, thereby is implyed no more particular efficacy then in the West; But that site is commended, in regard the damps and vaporous exhalations ingendered in the absence of the Sun, are by his returning rayes the sooner dispelled, and men thereby more early enjoy a cleare and healthy habitation; and upon these and the like considerations it is, that *Marcus Varro de re Rustica*, commendeth the same situation, and exposeth his farme unto the equinoxiall ascent of the Sun; that Palladius adviseth the front of his edifice should so respect the South, that in the first angle it receave the rising rayes of the winter Sunne, and decline a little from the winter setting thereof. And concordant hereunto is the instruction of Columella in his Chapter *Depositione villæ*, which hee contriveth into Summer and Winter habitations; ordering that the Winter lodgings regard the winter ascent of the Sun, that is, South-East; and the roomes of repast at supper, the Æquinoxiall setting thereof, that is, the West; that the Summer lodgings regard the Æquinoxiall Meridian, but the roomes of cænation in the Summer, he obverts unto the winter assent, that is, South-East; and the Balnearies or bathing places, that they may remaine under the Sun untill evening, hee exposeth unto the Summer setting, that is, North-West; in all which, although the Cardinall points be introduced, yet is the consideration Solary, and onely determined unto the aspect or visible reception of the Sun.

That Mahumetans and Jews in these and our neighbour parts are observed to use some gestures towards the East, as at their benediction, and the killing of their meate it cannot be denied; and though many ignorant spectators, and not a few of the actors conceave some Magick or mysterie therein, yet is the Ceremony onely Topicall, and in a memoriall relation unto a place they honour. So the Jews do carry a respect and cast an eye upon Jerusalem; for which practise they are not without the example of their forefathers, and the encouragement

of

Dan. 6.

of their wise King; For so it is said that Daniel went into his house, and his windowes being opened towards Jerusalem, he kneeled upon his knees three times a day, and prayed; So is it expressed in the prayer of Solomon, what prayer or supplication soever be made by any man, which shall spread forth his hands towards this house, if thy people go out to battaile, and shall pray unto the Lord towards the City which thou hast chosen, and toward the house which I have chosen to build for thy Name, then heare thou in heaven their prayer, and their supplication, and maintaine their cause. Now the observation hereof, unto the Jews that are dispersed Westward, and such as most converse with us, directeth their regard unto the East; But the words of Solomon are applyable unto all quarters of heaven, and by the Jews of the East and South must be regarded in a contrary position. So Daniel in Babylon looking toward Jerusalem had his face toward the West; So the Jews in their owne Land looked upon it from all quarters. For the Tribe of Judah beheld it to the North; Manasses, Zabulon, and Naphtali unto the South; Ruben and Gad unto the West; onely the Tribe of Dan regarded it directly or to the due East: and so when it is said Luke 12. when you see a cloud rise out of the West, you say there commeth a showre, and so it is; the observation was respective unto Judea; nor is this a reasonable illation in all other Nations whatsoever; For the Sea lay West unto that Country, and the winds brought raine from that quarter; But this consideration cannot be transferred unto India or China; which have a vast Sea Eastward, and a vaster Continent toward the West. So likewise when it is said by Job, in the vulgar Translation, Gold commeth out of the North; is this a reasonable inducement unto us and many other Countries, from some particular mines septentrionall unto his situation, to search after that metall in cold and Northerne regions, which wee most plentifully discover in hot and Southerne habitations?

For the Mahometans as they partake with all Religions in something, so they imitate the Jew in this. For in their observed gestures, they hold a regard unto Mecha and Medina Talnabi, two Cities in *Arabia felix*; where their Prophet was borne and buried; whither they performe their pilgrimages; and from whence they expect he should returne againe. And therefore they direct their faces unto these parts, which unto the Mahometans of Barbary and Ægypt lye East, and are in some point thereof, unto many other parts of Turkey: wherein notwithstanding there is no Orientall respect; for with the same devotion on the other side they regard these parts toward the West, and so with variety whersoever they are seated, conforming unto the ground of their conception.

Fourthly, whereas in the ordering of the Campe of Israel, the East quarter is appointed unto the noblest Tribe, that is the Tribe of Judah,

accor-

according to the command of God, Numb.2. In the East-side toward the rising of the Sunne, shall the Standard of the Tribe of Judah pitch, it doth not peculiarly extoll that point; for herein the East is not to bee taken strictly, but as it signifieth or implyeth the formost place; for Judah had the Van, and many Countries through which they passed were seated Easterly unto them. Thus much is implyed by the Originall, and expressed by Translations which strictly conforme thereto: So Tremellius and Junius, *Castra habentium ab anteriore parte Orientem versus, vexillum esto castrorum Iudæ*; so hath R. Solomon Jarchi expounded it, the foremost or before, is the East quarter, and the West is called behind: And upon this Interpretation may all be salved that is alleageable against it. For if the Tribe of Judah were to pitch before the Tabernacle at the East, and yet to march first, as is commanded Numb. 10. there must ensue a disorder in the Campe, nor could they conveniently observe the execution thereof: For when they set out from Mount Sinah where the Command was delivered, they made Northward unto Rithmah; from Rissah unto Ezionbeber about fourteen stations they marched South: From Almon Diblathaim through the mountaines of Yabarim and plaines of Moab towards Jordan the face of their march was West: So that if Judah were strictly to pitch in the East of the Tabernacle, every night he encamped in the Reare: And if (as some conceive) the whole Campe could not be lesse then twelve miles long, it had been prepostorous for him to have marched foremost, or set out first, who was most remote from the place to be approached.

Fifthly, that Learning, Civility and Arts, had their beginning in the East, it is not imputable either to the action of the Sunne, or its Orientality, but of the first plantation of Man in those parts, which unto Europe doe carry the respect of East; for on the mountaines of Ararat, that is part of the hill Taurus, between the East-Indies and Scythia, as Sir W. Ralegh accounts it, the Arke of Noah rested; from the East they travelled that built the Tower of Babell, from thence they were dispersed and successively enlarged, and learning good Arts and all Civility communicated. The progression whereof was very sensible; and if we consider the distance of time between the confusion of Babell, and the civility of many parts now eminent therein, it travelled late and slowly into our quarters; for notwithstanding the learning of Bardes and Druides of elder times, he that shall peruse that worke of Tacitus *de moribus Germanorum*, may easily discerne how little civility two thousand years had wrought upon that Nation; the like he may observe concerning our selves, from the same Author in the life of Agricola, and more directly from Strabo; who to the dishonour of our Predecessours, and the disparagement of those that glory in the Antiquity of their Ancestors, affirmeth, the Britans were so simple, that though

though they abounded in Milke, they had not the Artifice of Cheese.

Lastly, that the Globe it selfe is by Cosmographers divided into East and West, accounting from the first Meridian, it doth not establish this conceit; for that division is not naturally founded, but artificially set downe, and by agreement; as the aptest termes to define or commensurate the longitude of places. Thus the ancient Cosmographers doe place the division of the East and Westerne Hemisphere, that is the first terme of longitude in the Canary or fortunate Islands; conceiving these parts the extreamest habitations Westward: But the Modernes have altered that terme and translated it unto the Azores or Michaels Islands, and that upon a plausible conceit of the small or insensible variation of the compasse in those parts; wherein nevertheless, and though upon second invention, they proceed upon a common and no appropriate foundation; for even in that Meridian farther North or South the compasse observably varieth; and there are also other places wherein it varieth not, as Alphonso and Rodoriges *de Lago* will have it about *Capo de las Agullas* in Africa; as Maurolycus affirmeth in the shore of Peloponesus in Europe, and as Gilbertus averreth, in the middest of great regions, in most parts of the earth.

Chap. VIII.

Of the River Nilus.

Hereof uncontroulably and under generall consent many opinions are passant, which notwithstanding upon due examination, do admit of doubt or restriction: It is generally esteemed, and by most unto our dayes received, that the River of Nilus hath seven ostiaries; that is, by seven Channells disburdeneth it selfe into the Sea; wherein notwithstanding, beside that we finde no concurrent determination of ages past, and a positive and undeniable refute of these present, the affirmative is mutable, and must not be received without all limitation.

For some, from whom wee receive the greatest illustrations of Antiquity, have made no mention hereof: So Homer hath given no number of its Channells, nor so much as the name thereof in use with all Historians. Eratosthenes in his description of Ægypt hath likewise passed them over: Aristotle is so indistinct in their names and numbers, that in the first of Meteors, he plainly affirmeth the Region of Ægypt, which we esteem the ancientest Nation in the World, was a meere gained ground; and that by the setling of mud and limous matter brought downe by the River Nilus, that which was at first a continued Sea, was raysed at last into a firme and habitable Country. The like opinion hee held of Mæotis Palus, that by the floods of Tanais and

earth brought downe thereby, it grew obſervably ſhallower in his dayes, and would in proceſſe of time become a firme land. And though his conjecture be not as yet fulfilled, yet is the like obſervable in the River Gihon, a branch of Euphrates and River of Paradiſe, which having in former Ages diſcharged it ſelfe into the Perſian Sea, doth at preſent fall ſhort, being loſt in the lakes of Chaldea, and hath left betweene the Sea, a large and conſiderable part of dry land.

Others expreſly treating hereof have diverſly delivered themſelves; Herodotus in his Euterpe makes mention of ſeven, but careleſly of two thereof; that is, *Bolbitinum*, and *Bucolicum*; for theſe, ſaith he, were not the naturall currents, but made by Art for ſome occaſionall convenience. Strabo in his Geography naming but two, *Peluſiacum* and *Canopicum*, plainly affirmeth there were many more then ſeven; *Inter hæc alia quinq; &c.* There are (ſaith he) many remarkable townes within the Currents of Nile, eſpecially ſuch which have given the names unto the oſtearies thereof, not unto all, for they are eleven, and foure beſides, but unto ſeven and moſt conſiderable; that is, *Canopicum, Bulbitinum, Selenneticum, Sebenneticum, Pharniticum, Mendeſium, Taniticum*, and *Peluſium*; wherein to make up the number, one of the artificiall channels of Herodotus is accounted: Ptolomy an Ægyptian, and borne at the Peluſian mouth of Nile, in his Geography maketh nine, and in the third Map of Africa, hath unto their mouths prefixed their ſeverall names, that is, *Heracleoticum, Bolbitinum, Sebenneticum, Pineptum, Diolcos, Pathmeticum, Mendeſium, Taniticum, Peleuſiacum*; wherein notwithſtanding there are no leſſe then three different names from thoſe delivered by Pliny: All which conſidered, we may eaſily diſcerne that Authors accord not either in name or number, and muſt needs confirme the Judgement of Maginus, *de Oſtiorum, Nili numero & nominibus, valde antiqui ſcriptores diſcordant.*

Moderne Geographers and travellers do much abate of this number; for as Maginus and others obſerve, there are now but three or foure mouths thereof, as Gulielmus Tyrius long agoe, and Bellonius ſince, both ocular enquirers, with others have atteſted. For below Cairo, the River devides it ſelfe into foure branches, whereof two make the chiefe and navigable ſtreames, the one running to Peluſium of the Ancients, and now *Damiata*; the other unto *Canopium* and now *Roſcetta*; the other two, ſaith Mr. Sandys, doe runne betweene theſe, but poore in water; of thoſe ſeven mentioned by Herodotus, and thoſe nine by Ptolomy, theſe are all I could either ſee, or heare of.

Laſtly, what ever was or is their number, the contrivers of Cards and Maps, afford us no aſſurance or conſtant deſcription therein. For whereas Ptolomy hath ſet forth nine, Hondius in his Map of Africa, makes but eight, and in that of Europe ten. Ortelius in his *Theatrum Botannicum*, in the Map of the Turkiſh Empire, ſetteth downe eight, in

that of Ægypt eleven, and Maginus in his Map of that Countrey hath obſerved the ſame number; and if we enquire farther, wee ſhall finde the ſame diverſity and diſcord in divers others.

And thus may we perceave that this account was differently related by the Ancients, that it is undeniably rejected by the Modernes, and muſt be warily received by any. For if wee receave them all into account, they were more then ſeven, If onely the naturall fluces they were fewer; and however we receave them, there is no agreeable and conſtant deſcription thereof. And therefore how reaſonable it is to draw continuall and durable deductions from alterable and uncertaine foundations, let them conſider who make the gates of Thebes, and the mouthes of this River a conſtant and continued periphraſis for this number, and in their Poeticall expreſſions do give the River that Epithite unto this day; conceaving a perpetuity in mutability, and upon unſtable foundations erecting eternall aſſertions.

The ſame River is alſo accounted the greateſt of the earth, called therefore *Fluviorum pater*, and *totius Orbis maximus* by Ortelius; with the verity hereof, I confeſſe I could be well contented, nor do I wiſh the ruine of this aſſertion; nevertheleſſe if this be true, many Maps muſt be corrected, or the relations of divers good Authors renounced.

For firſt, in the deliniations of many Maps of Africa, the River Niger exceedeth it about ten degrees in length, that is, no leſſe then ſix hundred miles. For, ariſing beyond the Æquator it maketh Northward almoſt 15. degrees, and deflecting after Weſtward, without meanders, continueth a ſtrait courſe about 40. degrees; and with many great currents disburdeneth it ſelfe into the Occidentall Ocean. Againe, if wee credit the deſcriptions of good Authors, other Rivers excell it in length or breadth, or both; Arrianus in his hiſtory of Alexander, aſſigneth the firſt place unto the River Ganges, which truly according unto later relations, if not in length, yet in breadth and debth may bee granted to excell it: For the magnitude of Nilus conſiſteth in the dimenſion of Longitude, and is inconſiderable in the other, what ſtream it maintaineth beyond Syene or Aſna, and ſo forward unto its originall, relations are very imperfect, but below theſe places and farther removed from the head, the current is but narrow; and we reade in the hiſtory of the Turks, the Tartar horſemen of Selimus, ſwam over the Nile from Cairo, to meet the forces of Tonombeius; Scortias the Jeſuite expreſly treating hereof, preferreth the River of Plate in America; for that as Maffeus hath delivered, falleth into the Ocean in the latitude of forty Leagues, and with that ſource and plenty that men at Sea doe taſte freſh water, before they approach ſo neere as to diſcover the land: So is it exceeded by that which by Cardan is termed the greateſt in the world, that is the River Oregliana in the ſame Continent, which as Maginus delivereth, hath beene navigated 6000. miles, and opens in a

Channell

Channell of ninety leagues broad; so that, as Acosta an ocular witnesse recordeth, they that sayle in the middle, can make no land of either side.

Now the ground of this assertion was surely the magnifying esteem of the Ancients, arising from the indiscovery of its head. For as things unknowne seeme greater then they are, and are usually receaved with amplifications above their nature; So might it also be with this River, whose head being unknowne and drawne to a proverbiall obscurity, the opinion thereof became without bounds, and men must needs conceat a large extent of that to which the discovery of no man had set a period. And this an usuall way to give the superlative unto things of eminency in any kinde: and when a thing is very great, presently to define it to be the greatest of all; whereas indeed Superlatives are difficult, whereof there being but one in every kinde, their determinations are dangerous, and must not be made without great circumspection. So the City of Rome is magnified by the Latins to be the greatest of the earth; but time and Geography enforme us, that Cairo is bigger then ever it was, and Quinsay in China farre exceedeth both. So is Olympus extolled by the Greeks, as an hill attaining unto heaven; but the enlarged Geography of after times makes slight account hereof, when they discourse of Andes in Peru, or Teneriffa in the Canaries. So have all Ages conceaved, and most are still ready to sweare, the Wren is the least of birds, yet the discoveries of America, and even of our owne Plantations have shewed us one farre lesse, that is, the Humbird, not much exceeding a Beetle. And truly, for the least and greatest, the highest and the lowest of every kinde, as it is very difficult to define them in visible things, so is it to understand in things invisible. Thus is it no easie lesson to comprehend the first matter, and the affections of that which is next neighbour unto nothing; and impossible truly to comprehend God, who indeed is all things; and so things as they arise unto perfection, and approach unto God, or descend to imperfection, and draw neerer unto nothing, fall both imperfectly into our apprehensions; the one being too weake for our conception, our conception too weake for the other.

Thirdly, divers conceptions there are concerning its increment or inundation. The first unwarily opinions, that this encrease or annuall overflowing is proper unto Nile, and not agreeable unto any other River; which notwithstanding is common unto many currents of Africa. For about the same time the River Niger, and Zaire do overflow, and so do the Rivers beyond the mountaines of the Moone, as Suama, and Spirito Santo: and not onely these in Africa, but some also in Europe and Asia; for so it is reported of Menan in India, and so doth Botero report of Duina in Livonia, and the same is also observable in the River Jordan in Judea; for so is it delivered Josuah 3. that Jordan over-

floweth all his banks in the time of harveſt.

The effect indeed is wonderfull in all, and the cauſes ſurely beſt reſolvable from obſervations made in the Countries themſelves; the parts through which they paſſe, or whence they take their originall; That of Nilus hath beene attempted by many, and by ſome to that deſpaire of reſolution, that they have only referred it unto the providence of God, and the ſecret manuduction of all things unto their ends; but divers have attained the truth, and the cauſe alledged by Diodorus, Seneca, Strabo and others is allowable; that the inundation of Nilus in Ægypt proceeded from the raines in Æthiopia, and the mighty ſource of waters falling towards the fountaines thereof. For, this inundation unto the Ægyptians happeneth when it is winter unto the Æthiopians; which habitations, although they have no cold winter, the Sun being no farther removed from them in Cancer, then unto us in Taurus; yet is the fervour of the ayre ſo well remitted, as it admits a ſufficient generation of vapours, and plenty of ſhowres enſuing thereupon. This theory of the Ancients is ſince confirmed by experience of the Modernes, as namely by Franciſcus Alvarez who lived long in thoſe parts, and hath left a deſcription of Æthiopia; affirming that from the middle of June unto September, there fell in his time continuall raines. As alſo Antonius Ferdinandus, who in an Epiſtle written from thence, and noted by Condignus, affirmeth that during the winter, in thoſe Countries there paſſed no day without raine.

Now this is alſo an uſuall courſe to tranſlate a remarkable quality into a propriety, and where we admire an effect in one, to opinion there is not the like in any other, with theſe conceits do common apprehenſions entertaine the antidotall and wondrous condition of Ireland; conceaving in that Land onely an immunity from venemous creatures; but unto him that ſhall further enquire, the ſame will be affirmed of Creta memorable in ancient ſtories, even unto fabulous cauſes and benediction from the birth of Jupiter: The ſame is alſo found in Ebuſus or Eviſa, an Iſland neere Majorca upon the coaſt of Spaine. With theſe opinions do the eyes of neighbour ſpectators behold Ætna, the flaming mountaine in Sicilia; But Navigators tell us there is a burning mountaine in Iſland, a more remarkeable one in Teneriffa of the Canaries, and many vulcano's or fiery hils elſewhere. Thus Crocodiles were thought to be peculiar unto Nile, and the opinion ſo poſſeſſed Alexander, that when he had diſcovered ſome in Ganges, he fell upon conceit he had found the head of Nilus; but later diſcoveries affirme they are not onely in Aſia and Africa, but very frequent in ſome Rivers of America.

Another opinion confineth its inundation, and poſitively affirmeth, it conſtantly encreaſeth the ſeventeenth day of June, wherein notwithſtanding a larger forme of ſpeech were ſafer, then that which punctually

ally prefixeth a constant day thereto: for first, this expression is different from that of the Ancients, as Herodotus, Diodorus, Seneca, &c. delivering only that it happeneth about the entrance of the Sunne into Cancer; wherein they warily deliver themselves, and reserve a reasonable latitude. So when Hippocrates saith, *Sub Cane & ante Canem difficiles sunt purgationes*; there is a latitude of dayes comprised therein, for under the Dogstar he containeth not onely the day of its ascent, but many following, and some ten dayes preceding: So Aristotle delivers the affections of animalls, with the wary termes of *Circa & magna ex parte*: and when Theodorus translateth that part of his, *Coeunt Thunni & Scombri mense Februario post Idus, pariunt Iunio ante Nonas*: Scaliger for *ante Nonas*, renders it *Iunii initio*, becausethat exposition affordeth the latitude of divers dayes: For affirming it happeneth before the Nones, he alloweth but one day, that is the Calends, for in the Romane account the second day is the fourth of the Nones of June.

Againe, were the day definitive it had prevented the delusion of the Devill, nor could he have gained applause by its prediction; who (notwithstanding as Athanasius in the life of Anthony relateth) to magnifie his knowledge in things to come, when he perceived the rains to fall in Æthiopia, would presage unto the Ægyptians the day of its inundation. And this would also make useless that naturall experiment observed in earth or sand about the River, by the weight whereof (as good Authors report) they have unto this day, a knowledge of its encrease.

Lastly, it is not reasonable from variable and unstable causes, to derive a fixed and constant effect, and such are the causes of this Inundation, which cannot indeed be regular, and therefore their effects not prognosticable like Ecclipses; for depending upon the clouds and descent of showres in Æthiopia, which have their generation from vaporous exhalations, they must submit their existence unto contingencies, and endure anticipation and recession from the moveable condition of their causes. And therefore some yeares there hath been no encrease at all, as Seneca and divers relate of the eleventh yeare of Cleopatra, nor nine yeares together, as is testified by Calisthenes. Some yeares it hath also retarded, and came far later then usually it was expected, as according to Sozomen and Nicephorus it happened in the dayes of Theodosius; whereat the people were ready to mutiny, becausethey might not sacrifice unto the River according to the custome of their Predecessors.

Now this is also an usuall way of mistake, and many are deceived who too strictly construe the temporall considerations of things. Thus bookes will tell us, and weare made to beleeve that the fourteenth yeare males are seminificall and pubescent; but he that shall enquire into the generality, will rather adhere unto the cautelous assertion of Aristotle, that is *bis septem annis exactis*, and then but *magna ex parte*.

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That Whelps are blinde nine dayes, and then begin to see is generally beleeved; but as we have elsewhere declared, it is exceeding rare, nor doe their eye-lids usually open untill the twelfth, and sometimes not before the fourteenth day. And to speake strictly an hazardable determination it is unto fluctuating and indifferent effects, to affixe a positive type or period; for in effects of far more regular causalities difficulties doe often arise; and even in time it selfe which measureth all things, we use allowance in its commensuration. Thus while we conceive we have the account of a year in 365 dayes, exact enquirers and computists will tell us, that we escape 6 houres, that is a quarter of a day; and so in a day which every one accounts 24 houres, or one revolution of the Sunne; in strict account we must allow the addition of such a part as the Sunne doth make in his proper motion, from West to East, whereby in one day he describeth not a perfect circle.

Fourthly, it is affirmed by many, and received by most, that it never raineth in Ægypt, the River supplying that defect, and bountifully requiting it in its Inundation: but this must also be received in a qualified sense, that is, that it raines but seldome at any time in the Summer, and very rarely in the Winter. But that great showres do sometimes fall upon that Region, beside the assertion of many Writers, we can confirme from honourable and ocular testimony, and that not many yeares past, it rayned in Grand Cairo 8 or 9 dayes together. Beside men hereby forget the relation of holy Scripture, as is delivered Ex. 9. Behold I will cause it to raine a very grievous haile, such as hath not been in Ægypt since the foundation thereof even untill now: wherein God threatning such a raine as had not happened, it must be presumed they had been acquainted with some before; and were not ignorant of the substance, the menace being made in the circumstance.

Sir William Paston.

Now this mistake ariseth from a misapplication of the bounds or limits of time, and an undue transition from one unto another; which to avoid we must observe the punctuall differences of time, and so reasonably distinguish thereof, as not to confound or lose the one in the other. For things may come to passe, *Semper*, *Plerumq.* *Sæpè*, or *Nunquam*, *Aliquando*, *Raro*; that is Alwayes or never, for the most part or Sometimes, Oftimes or Seldome: Now the deception is usuall which is made by the misapplication of these; men presently concluding that to happen often, which happeneth but sometimes; that never, which happeneth but seldome; and that alway which happeneth for the most part: So is it said, the Sunne shines every day in Rhodes, because for the most part, it faileth not: So we say and believe that a Camelion never eateth, but liveth only upon ayre, whereas indeed it is seen to eat very seldome, but many there are who have beheld it to feed on flyes. And so it is said, that children borne in the eighth moneth live not; that is, for the most part, but not to be concluded alwayes; nor it seems in former

former ages in all places; for it is otherwise recorded by Aristotle concerning the births of Ægypt.

Lastly, it is commonly conceived that divers Princes have attempted to cut the Isthmus or tract of land which parteth the Arabian, and Mediterranean Sea; but wherein upon enquiry I finde some difficulty concerning the place attempted; many with good authority affirming, that the intent was not immediatly to unite these Seas, but to make a navigable channell betweene the Red Sea and the Nile, the markes whereof are extant to this day; it was first attempted by Sersostris, after by Darius, and in a feare to drowne the Country deserted by them both, but was long after re-attempted, and in some manner effected by Philadelphus; and so the Grand Signior who is Lord of the Country, conveyeth his Gallyes into the Red Sea by the Nile; for he bringeth them downe to Grand Cairo where they are taken in peeces, carryed upon Camels backs, and rejoyned together at Sues, his port and navall station for that Sea, whereby in effect he acts the designe of Cleopatra, who after the battell of Actium, in a different way would have conveyed her Gallies into the Red Sea.

And therefore that proverbe to cut an Isthmus, that is to take great paines, and effect nothing, alludeth not unto this attempt; but is by Erasmus applyed unto severall other, as that undertaking of Cnidians to cut their Isthmus, but especially that of Corinth so unsuccessfully attempted by many Emperors. The Cnidians were deterred by the peremptory disswasion of Apollo, plainly commanding them to desist; for if God had thought it fit, hee would have made that Country an Island at first. But this perhaps will not be thought a reasonable discouragement unto the activity of those spirits which endeavour to advantage nature by Art, and upon good grounds to promote any part of the universe; nor will the ill successe of some be made a sufficient determent unto others; who know that many learned men affirme, that Islands were not from the beginning; that many have been made since by Art, that some Isthmes have been eat through by the Sea, and others cut by the spade: And if policie and conveniencie would permit, that of Panama in America were most worthy the attempt, it being but few miles over, and would open a shorter cut unto the East Indies and China.

Chap. IX.

Of the Red Sea.

COntrary apprehensions are made of the Erythræan or Red Sea; most apprehending a materiall redneſſe therein, from whence they derive its common denomination; and some so lightly conceiving hereof,

hereof, as if it had no redneſſe at all, are faine to recurre unto other originalls of its appellation, wherein to deliver a diſtinct account, we firſt obſerve that without conſideration of colour it is named the Arabian Gulph: The Hebrews who had beſt reaſon to remember it, doe call it Zuph, or the weedy Sea, becauſe it was full of ſedge, or they found it ſo in their paſſage; the Mahometans who are now Lords thereof doe know it by no other name then the Gulph of Mecha a City of Arabia.

The ſtreame of Antiquity deriveth its name from King Erythrus; ſo ſlightly conceiving of the nominall deduction from Redneſſe, that they plainly deny there is any ſuch accident in it. The words of Curtius are plain beyond evaſion, *Ab Erythro rege inditum eſt nomen, propter quod ignari rubere aquas credunt*: Of no more obſcurity are the words of Philoſtratus, and of later times Sabellicus, *Stultè perſuaſum eſt vulgo rubras alicubi eſſe maris aquas, quin ab Erythro rege nomen pelago inditum*: of this opinion was Andræas Corſalius, Plinie, Solinus, Dio, Caſſius, who although they denyed not all redneſſe, yet did they relye upon the originall from King Erythrus.

Others have fallen upon the like, or perhaps the ſame conceit under another appellation; deducing its name not from King Erythrus but Eſau or Edom whoſe habitation was upon the coaſts thereof: Now Edom is as much as Erythrus, and the Red Sea no more then the Idumean; from whence the poſterity of Edom removing towards the Mediterranean coaſt; according to their former nomination by the Greeks were called Phænicians or red men, and from a plantation and colony of theirs an Iſland neere Spaine, was by the Greek deſcribers termed Erythra, as is declared by Strabo and Solinus.

Very many omitting the nominall derivation doe reſt in the groſſe and literall conception thereof, apprehending a reall redneſſe and conſtant colour of parts. Of which opinion are alſo they which hold the Sea receiveth a red and mimous tincture from ſprings, wells, and currents, that fall into it: and of the ſame beliefe are probably many Chriſtians who conceiving the paſſage of the Iſraelites through this Sea to have been the type of Baptiſme, according to that of the Apoſtle, All were baptiſed unto Moſes in the cloud, and in the Sea, for the better reſemblance of the bloud of Chriſt, they willingly received it in the apprehenſion of redneſſe, and a colour agreeable unto its myſtery; according to that of Auſten, *Significat mare illud rubrum Baptiſmum Chriſti; unde nobis Baptiſmus Chriſti niſi ſanguine Chriſti conſecratus?*

1 Cor. 10. 2.

But divers Modernes not conſidering theſe conceptions, and appealing unto the Teſtimony of ſenſe, have at laſt determined the point; concluding a redneſſe herein, but not in the ſenſe received. Sir Walter Raleigh from his owne and Portugall obſervations, doth place the red-

neſſe

neſſe of this Sea, in the reflexion from red Iſlands, and the redneſſe of the earth at the bottome, wherein Corall grows very plentifully, and from whence in great abundance it is tranſported into Europe; the obſervations of Alberquerque, and *Stephanus de Gama*, as from *Iohannes de Barros*, *Fernandius de Cordova* relateth, derive this redneſſe from the colour of the ſand and argillous earth at the bottome; for being a ſhallow Sea, while it rouleth to and fro, there appeareth a redneſſe upon the water, which is moſt diſcernible in ſunny and windie weather. But that this is no more then an apparent redneſſe, he confirmeth by an experiment: for in the reddeſt part taking up a veſſell of water, it differed not from the complexion of other Seas; nor is this colour diſcoverable in every place of that Sea; for as he alſo obſerveth, in ſome places it is very green, in others white and yellow, according to the colour of the earth or ſand at the bottome. And ſo may Philoſtratus bee made out when he ſaith, this Sea is blue; or Bellonius denying this redneſſe, becauſe he beheld not that colour about Sues; or when Corſalius at the mouth thereof could not diſcover the ſame.

Now although we have enquired the ground of redneſſe in this Sea, yet are we not fully ſatisfied; for what is forgot by many, and knowne by few, there is another Red Sea whoſe name we pretend nót to make out from theſe principles; that is, the Perſian Gulph or Bay, which divideth the Arabian and Perſian ſhoare, as Plinie hath deſcribed it, *Mare rubrum in duos dividitur ſinus, is qui ab Oriente eſt Perſicus appellatur*; or as Solinus expreſſeth it, *Qui ab Oriente eſt Perſicus appellatur, ex adverſo unde Arabia eſt, Arabicus*; whereto aſſenteth Suidas, Ortelius, & many more; and therefore there is no abſurdity in Strabo when he delivereth that Tigris and Euphrates doe fall into the Red Sea, and *Fernandius de Cordova*, juſtly defendeth his Countriman Seneca in that expreſſion, *Et qui renatum prorſus excipiens diem*

Tepidum Rubenti Tigrin immiſcet freto.

Nor hath only the Perſian Sea received the ſame name with the Arabian, but, what is ſtrange, and much confounds the diſtinction, the name thereof is alſo derived from King Erythrus, who was conceived to be buried in an Iſland of this Sea, as Dionyſius Afer, Curtius, and Suidas doe deliver, which were of no leſſe probability then the other, if as with the ſame Authors Strabo affirmeth, he was buried neare Caramania bordering upon the Perſian Gulph; and if his tombe was ſeen by Nearchus, it was not ſo likely to be in the Arabian Gulph; for we read that from the River Indus he came unto Alexander at Babylon, ſome few dayes before his death. Now Babylon was ſeated upon the River Euphrates, which runnes into the Perſian Gulph; and therefore however the Latine expreſſeth it in Strabo, that Nearchus ſuffered much in the Arabian Sinus, yet is the originall κόλπος πέρσικος, that is the Gulph of Perſia.

That therefore the Red Sea or Arabian Gulph received its name from perſonall derivation is but uncertaine, that both the Seas of one name ſhould have one common denominator leſſe probable; that one from name, another from colour not incredible; that there is a groſſe and materiall redneſſe in either not to be affirmed, that there is an emphaticall or apparent redneſſe in one, not well to be denyed; and this is ſufficient to make good the Allegory of the Chriſtians; and in this diſtinction may we juſtifie the name of the Blacke Sea, given unto Pontus Euxinus, the name of Xanthus, or the Yellow River of Phrygia, and the name of Mar Vermeio, or the Red Sea in America.

Chap. X.

Of the Blackneſſe of Negroes.

IT is evident not only in the generall frame of Nature, that things moſt manifeſt unto ſenſe, have proved obſcure unto the underſtanding: But even in proper and appropriate objects, wherein we affirme the ſenſe cannot erre, the faculties of reaſon moſt often fail us. Thus of colours in generall, under whoſe gloſſe and verniſh all things are ſeen, no man hath yet beheld the true nature, or poſitively ſet downe their incontroulable cauſes; which while ſome aſcribe unto the mixture of the Elements, others to the graduality of opacity and light; they have left our endeavours to grope them out by twilight, and by darkneſſe almoſt to diſcover that whoſe exiſtence is evidenced by light. The Chymiſts have attempted laudably, reducing their cauſes unto Sal, Sulphur, and Mercury; and had they made it out ſo well in this, as in the objects of ſmell and taſte, their endeavours had been more acceptable: For whereas they refer Sapor unto Salt, and Odor unto Sulphur, they vary much concerning colour; ſome reducing it unto Mercury, ſome to Sulphur, others unto Salt; wherein indeed the laſt conceit doth not oppreſſe the former, and Salt may carry a ſtrong concurrence therein. For beſide the fixed and terreſtrious Salt, there is in naturall bodies a *Sal niter* referring unto Sulphur; there is alſo a volatile or Armoniac Salt, retaining unto Mercury; by which Salts the colours of bodies are ſenſibly qualified, and receive degrees of luſtre or obſcurity, ſuperficiality or profundity, fixation or volatility.

Their generall or firſt natures being thus obſcure, there will be greater difficulties in their particular diſcoveries; for being farther removed from their ſimplicities they fall into more complexed conſiderations, and ſo require a ſubtiler act of reaſon to diſtinguiſh and call forth their natures. Thus although a man underſtood the generall nature of coloures, yet were it no eaſie probleme to reſolve, Why graſſe is green? Why

Why Garlick, Molyes, and Porrets have white roots, deep green leaves, and blacke ſeeds? Why ſeverall docks, and ſorts of Rhubarb with yellow roots, ſend forth purple flowers? Why alſo from Lactary or milky plants which have a white and lacteous juice diſperſed through every part, there ariſe flowers blue and yellow? Moreover beſide the ſpecificall and firſt digreſſions ordained from the Creation, which might bee urged to ſalve the variety in every ſpecies; why ſhall the marvaile of Peru produce its flowers of different colours, and that not once, or conſtantly, but every day and variouſly? Why Tulips of one colour produce ſome of another, and running through almoſt all, ſhould ſtill eſcape a blew? And laſtly, why ſome men, yea and they a mighty and conſiderable part of mankinde, ſhould firſt acquire and ſtill retaine the gloſſe and tincture of blackneſſe? which who ever ſtrictly enquires, ſhall finde no leſſe of darkneſſe in the cauſe, then blackneſſe in the effect it ſelfe, there ariſing unto examination no ſuch ſatisfactory and unquarrellable reaſons, as may confirme the cauſes generally received, which are but two in number; that is the heat and ſcorch of the Sunne, or the curſe of God on Cham and his poſterity.

The firſt was generally received by the Ancients, eſpecially the heathen, who in obſcurities had no higher recourſe then Nature, as may appeare by a Diſcourſe concerning this point in Strabo: By Ariſtotle it ſeems to be implyed, in thoſe Problems which enquire why the Sun makes men blacke, and not the fire? why it whitens wax, yet blacks the skin? By the word Æthiops it ſelfe, applyed to the memorableſt Nations of Negroes, that is of a burnt or torrid countenance: The fancie of the fable infers alſo the Antiquity of the opinion, which deriveth the complexion from the deviation of the Sunne, and the conflagration of all things under Phaeton: But this opinion though generally embraced, was I perceive rejected by Ariſtobulus a very ancient Geographer, as is diſcovered by Strabo; It hath been doubted by ſeverall moderne Writers, particularly by Ortelius, but amply and ſatisfactorily diſcuſſed as we know by no man; we ſhall therefore endeavour a full delivery hereof, declaring the grounds of doubt, and reaſons of deniall; which rightly underſtod, may if not overthrow, yet ſhrewdly ſhake the ſecurity of this aſſertion.

And firſt, many which countenance the opinion in this reaſon, doe tacitly and upon conſequence overthrow it in another: For whilſt they make the River Senaga to divide and bound the Moores, ſo that on the South-ſide they are blacke, on the other onely tawnie; they imply a ſecret cauſality herein from the ayre, place or River, and ſeem not to derive it from the Sunne; the effects of whoſe activity are not precipitouſly abrupted, but gradually proceed to their ceſſations.

Secondly, if we affirme that this effect proceeded, or as we will not be backward to concede, it may be advanced and fomented from the

fervor of the Sunne; yet doe we not hereby discover a principle sufficient to decide the question concerning other animals; nor doth he that affirmeth the heat makes man blacke, afford a reason why other animalls in the same habitations maintaine a constant and agreeable hue unto those in other parts, as Lions, Elephants, Camels, Swans, Tigers, Estriges; which though in Æthiopia, in the disadvantage of two Summers, and perpendicular rayes of the Sunne, doe yet make good the complexion of their species, and hold a colourable correspondence unto those in milder regions. Now did this complexion proceed from heat in man, the same would be communicated unto other animalls which equally participate the Influence of the common Agent: For thus it is in the effects of cold in Regions far removed from the Sunne; for therein men are not only of faire complexions, gray eyed, and of light haire, but many creatures exposed to the ayre, deflect in extremity from their naturall colours, from browne, russet and blacke, receiving the complexion of Winter, and turning perfect white; for thus Olaus Magnus relates, that after the Autumnall Æquinox, Foxes begin to grow white; thus Michovius reporteth, and we want not ocular confirmation, that Hares and Partridges turne white in the Winter; and thus a white Crow, a Proverbiall rarity with us, is none unto them; but that inseparable accident of Aristotles is separated in many hundreds.

Thirdly, if the fervor of the Sunne, or intemperate heat of clime did solely occasion this complexion, surely a migration or change thereof might cause a sensible, if not a totall mutation; which notwithstanding experience will not admit: For Negroes transplanted although into cold and flegmaticke habitations continue their hue both in themselves, and also their generations; except they mixe with different complexions, whereby notwithstanding there only succeeds a remission of their tinctures, there remaining unto many descents, a full shadow of their originalls; and if they preserve their copulations entire they still maintaine their complexions, as is very remarkable in the dominions of the Grand Signior, and most observable in the Moores in Brasilia, which transplanted about an hundred years past, continue the tinctures of their fathers unto this day: and so likewise faire or white people translated into hotter Countries receive not impressions amounting to this complexion, as hath been observed in many Europeans who have lived in the land of Negroes: and as *Edvardus Lopes* testifieth of the Spanish plantations, that they retained their native complexions unto his dayes.

Fourthly, if the fervor of the Sunne were the sole cause hereof in Æthiopia or any land of Negroes, it were also reasonable that inhabitants of the same latitude subjected unto the same vicinity of the Sunne, the same diurnall arch, and direction of its rayes, should also

partake

partake of the ſame hue and complexion, which notwithſtanding they do not; For the Inhabitants of the ſame latitude in Aſia are of a different complexion, as are the Inhabitants of Cambogia and Java; inſomuch that ſome conceave the Negroe is properly a native of Africa, and that thoſe places in Aſia inhabited now by Moores, are but the intruſions of Negroes ariving firſt from Africa, as we generally conceave of Madagaſcar, and the adjoyning Iſlands, who retaine the ſame complexion unto this day. But this defect is more remarkable in America, which although ſubjected unto both the Tropicks, yet are not the Inhabitants black betweene, or neere, or under either, neither to the Southward in Braſilia, Chili, or Peru, nor yet to the Northward in Hiſpaniola, Caſtilia, del Oro, or Nicaraguava; and although in many parts thereof it be confeſſed there bee at preſent ſwarmes of Negroes ſerving under the Spaniard, yet were they all tranſported from Africa, ſince the diſcovery of Columbus, and are not indigenous or proper natives of America.

Fifthly; we cannot conclude this complexion in Nations from the vicinity or habitude they hold unto the Sun, for even in Africa they be Negroes under the Southerne Tropick, but are not all of this hue either under or neere the Northerne. So the people of Gualata, Agades, Garamantes, and of Goaga, all within the Northerne Tropicks are not Negroes, but on the other ſide about Capo Negro, Cefala, and Madagaſcar, they are of a Jetty black.

Now if to ſalve this Anomaly wee ſay the heate of the Sun is more powerfull in the Southerne Tropick, becauſe in the ſigne of Capricorne falls out the Perigeum or loweſt place of the Sun in his Excentrick, whereby he becomes neerer unto them then unto the other in Cancer, wee ſhall not abſolve the doubt. And if any inſiſt upon ſuch nicities, and will preſume a different effect of the Sun, from ſuch a difference of place or vicinity, we ſhall ballance the ſame with the concernment of its motion, and time of revolution; and ſay he is more powerfull in the Northerne hemiſphere, and in the Apogeum; for therein his motion is ſlower, and ſo his heate reſpectively unto thoſe habitations, as of duration ſo alſo of more effect. For, though he abſolve his revolution in 365. dayes, odde howres and minutes, yet by reaſon of his Excentricity, his motion is unequall, and his courſe farre longer in the Northerne ſemicircle, then in the Southerne; for the latter he paſſeth in 178. dayes, but the other takes him 187. that is, eleven dayes more; ſo is his preſence more continued unto the Northerne Inhabitant, and the longeſt day in Cancer is longer unto us, then that in Capricorne unto the Southerne habitator. Beſide, hereby we onely inferre an inequality of heate in different Tropicks, but not an equality of effects in other parts ſubjected to the ſame; For, in the ſame degree, and as neere the earth he makes his revolution unto the American, whoſe

whose Inhabitants notwithstanding partake not of the same effect. And if herein we seek a relieſe from the Dogſtarre, we ſhall introduce an effect proper unto a few, from a cauſe common unto many, for upon the ſame grounds that Starre ſhould have as forcible a power upon America and Aſia, and although it be not verticall unto any part of Aſia, but onely paſſeth by Beach, *in terra incognita*; yet is it ſo unto America, and vertically paſſeth over the habitations of Peru and Braſilia.

Sixtly, and which is very conſiderable, there are Negroes in Africa beyond the Southerne Tropick, and ſome ſo far removed from it, as Geographically the clime is not intemperate, that is, neere the cape of good Hope, in 36. of Southerne Latitude. Whereas in the ſame elevation Northward, the Inhabitants of America are faire, and they of Europe in Candy, Sicily, and ſome parts of Spaine deſerve not properly ſo low a name as Tawny.

Laſtly, whereas the Africans are conceaved to be more peculiarly ſcorched and torrified from the Sun, by addition of drineſſe from the ſoyle, from want and defect of water, it will not excuſe the doubt. For the parts which the Negroes poſſeſſe, are not ſo void of Rivers and moiſture, as is herein preſumed; for on the other ſide the mountaines of the Moone, in that great tract called Zanzibar, there are the mighty Rivers of Suama, and *Spirito Santo*; on this ſide, the great River Zaire, the mighty Nile and Niger, which doe not onely moyſten, and contemperate the ayre by their exhalations, but refreſh and humectate the earth by their annuall inundations. Beſide, in that part of Africa, which with all diſadvantage is moſt dry, that is, in ſite betweene the Tropicks, defect of Rivers and inundations, as alſo abundance of ſands, the people are not eſteemed Negroes; and that is Lybia, which with the Greeks carries the name of all Africa; A region ſo deſert, dry and ſandy, that travellers (as Leo reports) are faine to carry water on their Camels, whereof they finde not a drop ſometime in 6. or 7. dayes; yet is this Countrey accounted by Geographers no part of *terra Nigritarum*, and Ptolomy placeth herein the *Leuco Æthiopes*, or pale and Tawney Moores.

Now the ground of this opinion might bee the viſible quality of Blackneſſe obſervably produced by heate, fire, and ſmoake; but eſpecially with the Ancients the violent eſteeme they held of the heate of the Sun, in the hot or torrid Zone; conceaving that part unhabitable, and therefore that people in the vicinities or frontiers thereof, could not eſcape without this change of their complexions. But how farre they were miſtaken in this apprehenſion, moderne Geography hath diſcovered: And as wee have declared, there are many within this Zone whoſe complexions deſcend not ſo low as blackneſſe. And if we ſhould ſtrictly inſiſt hereon, the poſſibility might fall into ſome queſtion; that is, whether the heate of the Sun, whoſe fervor may ſwarte

a living part, and even black a dead or diſſolving fleſh, can yet in animals whoſe parts are ſucceſſive and in continuall flux, produce this deepe and perfect gloſſe of Blackneſſe.

Thus having evinced at leaſt made dubious, the Sunne is not the Author of this blackneſſe, how and when this tincture firſt began is yet a Riddle, and poſitively to determine it ſurpaſſeth my preſumption. Seeing therefore we cannot certainly diſcover what did effect it, it may afford ſome piece of ſatisfaction to know what might procure it: It may be therefore conſidered, whether the inward uſe of certaine waters or fountaines of peculiar operations, might not at firſt produce the effect in queſtion. For, of the like we have records in ſtory related by Ariſtotle, Strabo, and Pliny, who hath made a collection hereof, as of two fountaines in Bæotia, the one making Sheepe white, the other black, of the water of Siberis which made Oxen black, and the like effect it had alſo upon men, dying not onely the skin, but making their haires black and curled. This was the conceit of Ariſtobulus, who receaved ſo little ſatisfaction from the other, or that it might be cauſed by heate, or any kinde of fire, that he conceaved it as reaſonable to impute the effect unto water.

Secondly, it may be perpended whether it might not fall out the ſame way that Jacobs cattell became ſpeckled, ſpotted and ringſtraked, that is, by the power and efficacy of Imagination; which produceth effects in the conception correſpondent unto the phancy of the Agents in generation, and ſometimes aſſimilates the Idea of the generator into a realty in the thing ingendred. For, hereof there paſſe for currant many indiſputed examples; ſo in Hippocrates wee reade of one, that from the view and intention of a picture conceaved a Negroe; And in the hiſtory of Heliodore of a Mooriſh Queene, who upon aſpection of the picture of Andromeda, conceaved and brought forth a faire one. And thus perhaps might ſome ſay it was at the beginning of this complexion, induced firſt by Imagination, which having once impregnated the ſeed, found afterward concurrent productions, which were continued by Climes, whoſe conſtitution advantaged the firſt impreſſion. Thus Plotinus conceaveth white Peacocks firſt came in: Thus as Aldrovand relateth, many opinion that from aſpection of the Snow which lyeth long in Northerne Regions, and high mountaines, Hawkes, Kites, Beares, and other creatures become white; And by this way Auſtin conceaveth the Devill provided, they never wanted a white ſpotted Oxe in Ægypt, for ſuch an one they worſhipped, and called it Apis.

Thirdly, it is not indiſputable whether it might not proceed from ſuch a cauſe and the like foundation of Tincture, as doth the black Jaundiſe, which meeting with congenerous cauſes might ſettle durable inquinations, and advance their generations unto that hue, which was naturally

naturally before but a degree or two below it: And this transmission we shall the easier admit in colour, if we remember the like hath beene effected in organicall parts and figures; the Symmetry whereof being casually or purposely perverted, their morbosities have vigorously descended to their posterities, and that in durable deformities. This was the beginning of Macrophali or people with long heads, whereof Hippocrates, *De Aere, Aquis & Locis*, hath cleerely delivered himself: *Cum primum editus est Infans, caput ejus tenellum manibus effingunt, & in longitudine adolescere cogunt; hoc institutum primum hujusmodi, naturæ dedit vitium, successu vero temporis in naturam abiit, ut proinde instituto nihil amplius opus esset; semen enim genitale ex omnibus corporis partibus provenit, ex sanis quidem sanum, ex morbosis morbosum: Si igitur ex caluis calui, ex cæciis cæci, & ex distortis, ut plurimum, distorti gignuntur, eademq; in cæteris formis valet ratio, quid prohibet cur non ex macrocephalis macrocephali gignantur?* Thus as Aristotle observeth, the Deeres of Arginusa had their eares divided, occasioned at first by slitting the eares of Deere. Thus have the Chineses little feete, most Negroes great lips and flat noses; and thus many Spaniards, and mediterranean Inhabitants, which are of the race of Barbary Moores, (although after frequent commixture) have not worne out the Camoys nose unto this day.

Lastly, if wee must still be urged to particularities, and such as declare how and when the seede of Adam did first receave this tincture; wee may say that men became blacke in the same manner that some Foxes, Squirrels, Lions first turned of this complexion, whereof there are a constant sort in divers Countries; that some Chaughes came to have red legs and bils, that Crowes became pyed; All which mutations however they began, depend on durable foundations, and such as may continue for ever. And if as yet we cannot satisfie, but must farther define the cause and manner of this mutation; wee must confesse, in matters of Antiquity, and such as are decided by History, if their Originals and first beginnings escape a due relation, they fall into great obscurities, and such as future Ages seldome reduce unto a resolution. Thus if you deduct the Administration of Angels, and that they dispersed the creatures into all parts after the flood, as they had congregated them into Noahs Arke before; it will be no easie question to resolve, how severall sorts of Animalls were first dispersed into Islands, and almost how any into America. How the venereall contagion began in that part of the earth, since history is silent, is not easily resolved by Philosophy; For, whereas it is imputed unto Anthropophagy, or the eating of mans flesh, the cause hath beene common unto many other Countries, and there have beene Canibals or men-eaters in the three other parts of the world, if wee credit the relations of Ptolomy, Strabo, and Pliny. And thus, if the favourable pen of Moses had not

revealed

revealed the confusion of tongues, and positively declared unto us their division at Babell, our disputes concerning their beginning had beene without end, and I feare we must have left the hopes of that decision unto Elias.

And if any will yet insist, and urge the question farther still upon me, I shall be enforced unto divers of the like nature, wherein perhaps I shall receave no greater satisfaction. I shall demand how the Camels of Bactria came to have two bunches on their backs, whereas the Camels of Arabia in all relations have but one? How Oxen in some Countries began and continue gibbous or bunch back'd? what way those many different shapes, colours, haires, and natures of Dogs came in? how they of some Countries became depilous and without any haire at all, whereas some sorts in excesse abound therewith? How the Indian Hare came to have a long tayle, whereas that part in others attaines no higher then a scut? How the hogs of Illyria which Aristotle speakes of, became to be solipedes or wholl hoofed; whereas in all other parts they are bisulcous and described cloven hoofed by God himselfe? All which with many others must needs seeme strange unto those, that hold there were but two of the uncleane sort in the Arke, and are forced to reduce these varieties to unknowne originals since.

However therefore this complexion was first acquired, it is evidently maintained by generation, and by the tincture of the skin as a spermaticall part traduced from father unto son, so that they which are strangers contract it not, and the Natives which transmigrate omit it not without commixture, and that after divers generations. And this affection (if the story were true) might wonderfully be confirmed, by what Maginus and others relate of the Emperour of Æthiopia, or Prester John, who derived from Solomon is not yet descended into the hue of his Countrey, but remaines a Mulatto, that is, of a mongrill complexion unto this day. Now although we conceive this blackness to be seminall, yet are we not of Herodotus conceit, that is, that their seed is black; an opinion long agoe rejected by Aristotle, and since by sence and enquiry; his assertion against the Historian was probable, that all seed was white; that is, without great controversie in viviparous Animals, and such as have Testicles, or preparing vessels wherein it receives a manifest dealbation: And not onely in them, but (for ought I know) in Fishes, not abating the seed of Plants, whereof though the skin and covering be black, yet is the seed and fructifying part not so: as may be observed in the seeds of Onyons, Pyonie, and Basill: most controvertible it seemes, in the spawne of Frogs, and Lobsters, whereof notwithstanding at the very first the spawne is white, contracting by degrees a blackness, answerable in the one unto the colour of the shell, in the other unto the porwigle or Tadpole, that is, that animall which

first proceedeth from it: And thus may it also be in the generation and sperme of Negroes; that being first and in its naturals white, but upon separation of parts, accidents before invisible become apparent; there arising a shadow or darke efflorescence in the outside, whereby not onely their legitimate and timely births, but their abortions are also duskie, before they have felt the scortch and fervor of the Sun.

Chap. XI.

Of the same.

A Second opinion there is, that this complexion was first a curse of God derived unto them from Cham, upon whom it was was inflicted for discovering the nakednesse of Noah. Which notwithstanding is sooner affirmed then proved, and carrieth with it sundry improbabilities. For first, if we derive the curse on Cham, or in generall upon his posterity, we shall Benegroe a greater part of the earth then ever was, or so conceived; and not onely paint the Æthiopians, and reputed sons of Cush, but the people also of Ægypt, Arabia, Assyria, and Chaldea; for by his race were these Countries also peopled. And if concordantly unto Berosus, the fragment of *Cato de Originibus*, some things of Halicarnasseus, Macrobius, and out of them of Leandro and Annius, wee shall conceive of the travailes of Camese or Cham, wee may introduce a generation of Negroes as high as Italy, which part was never culpable of deformity, but hath produced the magnified examples of beauty.

Secondly, the curse mentioned in Scripture was not denounced upon Cham, but Canaan his youngest son, and the reasons thereof are divers; the first, from the Jewish Tradition, whereby it is conceived, that Canaan made the discovery of the nakednesse of Noah, and notified it unto Cham. Secondly, to have cursed Cham had been to curse all his posterity, whereof but one was guilty of the fact. And lastly, he spared Cham, because he had blessed him before, cap. 9. Now if we confine this curse unto Canaan, and thinke the same fulfilled in his posterity, then do we induce this complexion on the Sidonians, then was the promised land a tract of Negroes; For from Canaan were discended the Canaanites, Jebusites, Amorites, Gergezites, and Hevites, which were possessed of that Land.

Thirdly, although we should place the originall of this curse upon one of the sons of Cham, yet were it not knowne from which of them to derive it. For the particularity of their discents is imperfectly set downe by accountants, nor is it distinctly determinable from whom thereof the Æthiopians are proceeded. For, whereas these of Africa are generally esteemed to be the Issue of Chus, the elder son of Cham,

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it is not ſo eaſily made out. For the land of Chus, which the Septuagint tranſlates Æthiopia, makes no part of Africa, nor is it the habitation of Blackmores, but the countrie of Arabia, eſpecially the Happy, and ſtony; poſſeſſions and Colonies of all the ſons of Chus, excepting Nimrod, and Havilah, poſſeſſed and planted wholly by the children of Chus, that is, by Sabtah and Raamah, Sabtacha, and the ſons of Raamah, Dedan and Sheba, according unto whoſe names the Nations of thoſe parts have received their denominations, as may bee collected from Pliny and Ptolomy; and as wee are informed by credible Authors, they hold a faire Analogie in their names, even unto our dayes. So the wife of Moſes tranſlated in Scripture an Æthiopian, and ſo confirmed by the fabulous relation of Joſephus, was none of the daughters of Africa, nor any Negroe of Æthiopia, but the daughter of Jethro, Prince and Prieſt of Madian, which was a part of Arabia the ſtony, bordering upon the Red Sea. So the Queene of Sheba came not unto Solomon out of Æthiopia, but from Arabia, and that part thereof which bore the name of the firſt planter thereof, the ſon of Chus. So whether the Eunuch which Philip the Deacon baptiſed, were ſervant unto Candace Queene of the African Æthiopia, (although Damianus *à* Goes, Codignus, and the Æthiopick relations averre) is yet by many, and with ſtrong ſuſpicions doubted. So that Army of a million, which Zerah King of Æthiopia is ſaid to bring againſt Aſa, was drawn out of Arabia, and the plantations of Chus, not out of Æthiopia, and the remote habitations of the Moores; For it is ſaid that Aſa purſuing his victory, tooke from him the city Gerar; now Gerar was no city in or neere Æthiopia, but a place betweene Cadeſh and Zur, where Abraham formerly ſojourned. Since therefore theſe African Æthiopians, are not convinced by the common acception to be the ſons of Chus, whether they be not the poſterity of Phut, or Mizraim, or both, it is not aſſuredly determined; For Mizraim, he poſſeſſed Ægypt, and the Eaſt parts of Africa: From Ludym his ſon came the Lybians, and perhaps from them the Æthiopians: Phut poſſeſſed Mauritania, and the Weſterne parts of Africa, & from theſe perhaps deſcended the Moors of the Weſt, of Mandinga, Meleguette and Guinie. But from Canaan, upon whom the curſe was pronounced, none of theſe had their originall, for he was reſtrained unto Canaan and Syria; although in after Ages many Colonies diſperſed, and ſome thereof upon the coaſts of Africa, and the prepoſſeſſions of his elder brothers.

Fourthly, to take away all doubt or any probable divarication, the curſe is plainely ſpecified in the Text, nor need we diſpute it, like the marke of Cain; *Servus ſervorum erit fratribus ſuis*, Curſed be Canaan, a ſervant of ſervants ſhall he be unto his brethren; which was after fulfilled in the conqueſt of Canaan, ſubdued by the Iſraelites, the poſterity of Sem; which Prophecy Abraham well underſtanding, tooke an

oath of his ſervant not to take a wife for his Son Iſaac out of the daughters of the Canaanites; And the like was performed by Iſaac in the behalfe of his ſon Jacob. As for Cham and his other ſons this curſe attained them not, for Nimrod the ſon of Chus ſet up his kingdome in Babylon, and erected the firſt great Empire, Mizraim and his poſterity grew mighty Monarches in Ægypt; and the Empire of the Æthiopians hath beene as large as either.

Laſtly, whereas men affirme this colour was a Curſe, I cannot make out the propriety of that name, it neither ſeeming ſo to them, nor reaſonably unto us; for they take ſo much content therein, that they eſteeme deformity by other colours, deſcribing the Devill, and terrible objects White. And if wee ſeriouſly conſult the definitions of beauty, and exactly perpend what wiſe men determine thereof, wee ſhall not reaſonably apprehend a curſe, or any deformity therein. For firſt, ſome place the eſſence thereof in the proportion of parts, conceiving it to conſiſt in a comely commenſurability of the whole unto the parts, and the parts betweene themſelves, which is the determination of the beſt and learned Writers: and whereby the Moores are not excluded from beauty; there being in this deſcription no conſideration of colours, but an apt connexion and frame of parts and the whole. Others there be, and thoſe moſt in number, which place it not onely in proportion of parts, but alſo in grace of colour; But to make Colour eſſentiall unto Beauty, there will ariſe no ſlender difficulty; For, Ariſtotle in two definitions of pulchritude, and Galen in one, have made no mention of colour: Neither will it agree unto the Beauty of Animals, wherein notwithſtanding there is an approved pulchritude. Thus horſes are handſome under any colour, and the ſymmetry of parts obſcures the conſideration of complexions; Thus in concolour animals and ſuch as are confined unto one colour wee meaſure not their Beauty thereby; for if a Crow or Black-bird grow white, wee generally accounted it more pretty, And even in monſtroſity deſcend not to opinion of deformity. And by this way likewiſe the Moores eſcape the curſe of deformity, there concurring no ſtationary colour, and ſometimes not any unto Beauty.

The Platonick contemplators reject both theſe deſcriptions founded upon parts and colours, or either, as M. Leo the Jew hath excellently diſcourſed in his Genealogy of Love, defining Beauty a formall grace, which delights and moves them to love which comprehend it. This grace ſay they, diſcoverable outwardly, is the reſplendor and Raye of ſome interiour and inviſible Beauty, and proceedeth from the formes of compoſitions amiable; whoſe faculties if they can aptly contrive their matter, they beget in the ſubject an agreeable and pleaſing beauty, if over ruled thereby, they evidence not their perfections, but runne into deformity. For ſeeing that out of the ſame materials, Therſites

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and Paris Beauty and monſtroſity may be contrived, the formes and operative faculties introduce and determine their perfections; which in naturall bodies receive exactneſſe in every kinde, according to the firſt Idea of the Creator, and in contrived bodies the phancie of the Artificer: And by this conſideration of Beauty, the Moores alſo are not excluded, but hold a common ſhare therein with all mankinde.

Laſtly, in whatſoever its Theory conſiſteth, or if in the generall, we allow the common conceit of ſymmetry and of colour, yet to deſcend unto ſingularities, or determine in what ſymmetry or colour it conſiſted, were very dangerous; for beauty is determined by opinion, and ſeems to have no eſſence that holds one notion unto all; that ſeeming beauteous unto one, which hath no favour with another, and that unto every one, according as cuſtome hath made it naturall, or ſympathy and conformity of minds ſhall make it ſeem agreeable. Thus flat noſes ſeem comly unto the Moore, an Aquiline or hawked one unto the Perſian, a large and prominent noſe unto the Romane, but none of all theſe are acceptable in our opinion. Thus ſome thinke it moſt ornamentall to weare their Bracelets on their wreſts, others ſay it is better to have them about their Ancles; ſome thinke it moſt comely to weare their Rings and Jewells in the Eare, others will have them about their privities; a third will not thinke they are compleat except they hang them in their lips, cheeks or noſes. Thus Homer to ſet off Minerva calleth her γλαυκῶπις, that is gray or light blew eyed: now this unto us ſeems farre leſſe amiable then the black. Thus we that are of contrary complexions accuſe the blacknes of the Mores as ugly: But the Spouſe in the Canticles excuſeth this conceit, in that deſcription of hers, I am black, but comely: And howſoever Cerberus, and the furies of hell be deſcribed by the Poets under this complexion, yet in the Beauty of our Saviour blackneſſe is commended, when it is ſaid his locks are buſhie and blacke as a Raven. So that to inferre this as a curſe, or to reaſon it as a deformity, is no way reaſonable; the two foundations of beauty Symmetry and Complexion, receiving ſuch various apprehenſions, that no deviation will bee expounded ſo high as a curſe or undeniable deformity, without a manifeſt and confeſſed degree of monſtroſity.

Laſtly, it is a very injurious method unto Philoſophy, and a perpetuall promotion unto Ignorance, in points of obſcurity, nor open unto eaſie conſiderations, to fall upon a preſent refuge unto Miracles, or recurre unto immediate contrivance from the inſearchable hands of God. Thus in the conceit of the evill odor of the Jewes, Chriſtians without a farther reſearch into the verity of the thing, or enquiry into the cauſe, drawe up a judgement upon them, from the paſſion of their Saviour. Thus in the wondrous effects of the clime of Ireland, and the freedome from all venomous creatures, the credulity of common conceit imputes this immunity unto the benediction of St. Patrick, as Beda

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and Gyraldus have left recorded. Thus the Asse having a peculiar marke of a crosse made by a blacke list downe his backe, and another athwart, or at right angles downe his shoulders; common opinion ascribe this figure unto a peculiar signation, since that beast had the honour to beare our Saviour upon his backe. Certainly this is a course more desperate then Antipathies, Sympathies or occult qualities; wherein by a finall and satisfactive discernment of faith, we lay the last and particular effects upon the first and generall cause of all things, whereas in the other wee doe but palliate our determinations, untill our advanced endeavors doe totally reject or partially salve their evasions.

Chap. XII.

A digression concerning Blackness.

THere being therefore two opinions repugnant unto each other, it may not be presumptive or skepticall in me to doubt of both, and because we remaine imperfect in the generall theory of Colours, wee shall deliver at present a short discovery of blacknes, wherein although perhaps we afford no greater satisfaction then others, yet shall our attempts exceed any; for wee shall emperically and sensibly discourse hereof, deducing the causes of Blackness from such originalls in Nature, as we doe generally observe things are denigrated by Art: And herein I hope our progression will not be thought unreasonable; For Art being the imitation of Nature, or Nature at the second hand; it is but a sensible expression of effects dependant on the same, through more removed causes, and therefore the works of the one, must prove reasonable discoverers of the other.

And first, things become blacke by a sootish and fuliginous matter proceeding from the sulphur of bodies torrified, not taking *fuligo* strictly, but in opposition unto ἁλμίς, that is any kind of vaporous or madefying excretion, and comprehending ἀναθυμίασις, that is as Aristotle defines it, a separation of moist and dry parts made by the action of heat or fire, & colouring bodies objected. Hereof, in his Meteors, from the qualities of the subject he raiseth three kinds; the exhalations from ligneous and lean bodies, as bones, hair, and the like he calleth κάπνος *fumus*; from fat bodies, and such as have not their fatnesse conspicuous or separated, he tearmeth λιγνὺς *fuligo*, as waxe, rosin, pitch, or turpentine; that from unctuous bodies, and such whose oylinesse is evident, he nameth ἰχὼρ or *sidor*; now every one of these doe blacke the bodies objected unto them, and are to be conceived in the sooty and fuliginous matter expressed.

I say, proceeding from the sulphur of bodies torrified, that is the oily

oily fat and unctuous parts wherein consist the principles of flammability; not pure and refined sulphur, as in the spirits of wine often rectified, but containing terrestrious parts, and carrying with it the volatile salt of the body, and such as is distinguishable by taste in soot; nor vulgar and usuall sulphur, for that leaves none or very little blackness, except a metalline body receive the exhalation.

I say, torrified, sindged, or suffering some impression from fire, thus are bodies casually or artificially denigrated, which in their naturalls are of another complexion; thus are Charcoales made black by an infection of their own suffitus; so is it true what is affirmed of combustible bodies, *Aduſta nigra, peruſta alba*, black at first from the suliginous tincture, which being exhaled they become white, as is perceptible in ashes. And so doth fire cleanse and purifie bodies, because it consumes the sulphureous parts, which before did make them foule; and therefore refines those bodies which will never bee mundified by water. Thus Camphire of a white substance, by its fuligo affordeth a deepe black. So is pitch blacke, although it proceed from the same tree with rozen, the one distilling forth, the other forced by fire; so of the suffitus of a torch, doe Painters make a velvet blacke; so is lampe blacke made; so of burnt Harts horn a sable; so is Bacon denigrated in Chimneyes: so in fevers and hot distempers from choler aduſt is caused a blackness in our tongues, teeth and excretions: so are ustilago, brant corne and trees blacke by blasting; so parts cauterized, gangrenated, siderated and mortified, become black, the radicall moisture, or vitall sulphur suffering an extinction, and smothered in the part affected. So not only actuall but potentiall fire, nor burning fire, but also corroding water will induce a blacknes. So are Chimneyes and furnaces generally blacke, except they receive a cleare and manifest sulphur; for the smoak of sulphur will not blacke a paper, and is commonly used by women to whiten Tiffanies; which it performeth by an acide vitriolous, and penetrating spirit ascending from it, by reason whereof it is not apt to kindle any thing, nor will it easily light a candle, untill that spirit bee spent, and the flame approacheth the match: And this is that acide and piercing spirit which with such activity and compunction invadeth the braines and nostrills of those that receive it. And thus when Bellonius affirmeth that Charcoales, made out of the wood of Oxycedar are white, Dr. Jordan in his judicious Discourse of minerall waters yeeldeth the reason, because their vapours are rather sulphureous then of any other combustible substance. So we see that Tinby coals will not blacke linnen being hanged in the smoake thereof, but rather whiten it, by reason of the drying and penetrating quality of sulphur, which will make red Roses white: And therefore to conceive a generall blackness in Hell, and yet therein the materiall flames of sulphur, is no Philosophicall conception, nor will it consist with the reall effects of its nature.

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These are the advenient and artificiall wayes of denigration, answerably whereto may be the natural progresse: These are the waies whereby culinary and common fires doe operate, and correspondent hereunto may be the effects of fire elementall. So may Bitumen, coales, Jet, blacke lead, and divers minerall earths become black; being either fuliginous concretions in the earth, or suffering a scortch from denigrating principles in their formation: So Iron (as Metallists expresse it) consisting of impure Mercury and combust sulphur, becomes of a darke and sad complexion, whereas other metalls have a vivacity and quickness in aspect. So men and other animalls receive different tinctures from constitution and complexionall effloreſcences, and descend still lower, as they partake of the fuliginous and denigrating humor. And so may the Æthiopians or Negroes become coal-blacke from fuliginous effloreſcences and complexionall tinctures arising from such probabilities, as we have declared before.

The second way whereby bodies become blacke, is an Atramentous condition or mixture, that is a vitriolate or copperose quality conjoyning with a terrestrious and astringent humidity, for so is *Atramentum scriptorium*, or writing Inke commonly made, by copperose cast upon a decoction or infusion of galls. I say, a vitriolous or copperous quality; for vitriol is the active or chiefe ingredient in Inke, and no other salt that I know will strike the colour with galles; neither Alom, Sal-gemme, Nitre, nor Armoniack: now artificiall copperose, and such as we commonly use, is a rough and acrimonious kinde of salt drawne out of ferreous and eruginous earths, partaking chiefly of Iron and Copper, the blew of copper, the green most of Iron: Nor is it unusuall to dissolve fragments of Iron in the liquor thereof, for advantage in the concretion. I say, a terrestrious or astringent humidity; for without this there will ensue no tincture; for copperose in a decoction of Lettuce or Mallows affords no black, which with an astringent mixture it will doe, though it be made up with oyle as in printing and painting Inke: But whereas in this composition wee use onely Nut-galles, that is an excrescence from the Oake, therein we follow and beat upon the old receit; for any plant of austere and stiptick parts will suffice, as I have experimented in Bistorte, Myrobolaus, Myrtus Brabantica, Balaustium, and Red-roses: and indeed, most decoctions of astringent plants, of what colour soever, doe leave in the liquor a deep and Muscadine red, which by addition of vitriol descend into a blacke: And so Dioscorides in his receit of Inke, leaves out gall, and with copperose makes use of soot.

Now if we inquire in what part of vitriol this Atramentall and denigrating condition lodgeth, it will seeme especially to lye in the fixed salt thereof; For the phlegme or aqueous evaporation will not denigrate, nor yet spirits of vitriol, which carry with them volatile and nimbler

nimbler Salt: For if upon a decoction of Copperose and gall, be powred the spirits or oyl of vitriol, the liquor will relinquish his blackness, the gall and parts of the copperose precipitate unto the bottom, and the Inke grow cleare again, which indeed it will not so easily doe in common Inke, because that gumme is dissolved therein, which hindereth the separation: But Colcothar or vitriol burnt, though unto a redness containing the fixed salt, will make good Inke, and so will the Lixivium, or Lye made thereof with warme water; but the *Terra* or insipide earth remaining, affords no blacke at all, but serves in many things for a grosse and usefull red.

And if we yet make a more exact enquiry, by what this salt of vitriol more peculiarly gives this colour, we shall finde it to be from a metalline condition, and especially an Iron property or ferreous participation: For blew Copperose which deeply partakes of the copper will doe it but weakly; Verdigrise which is made out of copper will not doe it at all; But the filings of Iron infused in vinegar, will with a decoction of galles make good Inke, without any copperose at all, and so will infusion of Loadstone, which is of affinity with Iron, and though more conspicuously in Iron, yet such a Calcanthous or Atramentous quality, we will not wholly reject in other metalls, whereby we often observe blacke tinctures in their solutions. Thus a Lemmon, Quince, or sharpe Apple cut with a knife becomes immediatly blacke: And so from the like cause, Artichokes, so sublimate beat up with whites of Egges, if touched with a knife becomes incontinently black. So *Aqua Fortis*, whose ingredient is vitriol will make white bodies blacke. So Leather dressed with the barke of Oake, is easily made blacke by a bare solution of copperose. So divers Minerall warers and such as participate of Iron, upon an infusion of galles become of a dark colour, and entring upon black. So steele infused, makes not only the liquor duskie, but in bodies wherein it concurs with proportionable tinctures makes also the excretions black. And so also from this vitriolous quality *Mercuries dulcis*, and vitriol vomitive occasion black ejections.

Such a condition there is naturally in some living creatures. Thus that blacke humor by Aristotle named θόλος, and commonly translated *Atramentum*, may be occasioned in the Cuttle. Such a condition there is naturally in some plants, as Black-berries, Walnut rinds, Black-cherries, whereby they extinguish inflamations, corroborate the stomacke, and are esteemed, specificall in the Epilepsie. Such an Atramentous condition there is to bee found sometime in the bloud, when that which some call Acetum, others vitriolum, concurs with parts prepared for this tincture. And so from these conditions the Moores might possibly become Negroes, receiving Atramentous impressions in some of those wayes, whose possibility is by us declared.

Nor is it strange that we affirme there are vitriolous parts, qualities,

and even at some distance Vitriol it selfe in living bodies; for there is a sowre, stipticke salt diffused through the earth, which passing a concoction in plants, becommeth milder and more agreeable unto the sense, and this is that vegetable vitriol, whereby divers plants containe a gratefull sharpnesse; as Lemmons, Pomegranates, Cherries, or an austere and inconcocted roughnesse, as Sloes, Medlers and Quinces: And that not onely vitriol is a cause of blackenesse, but that the salts of naturall bodies doe carry a powerfull stroake in the tincture and vernish of all things, we shall not deny, if we contradict not experience, and the visible art of Dyars, who advance and graduate their colours with Salts, for the decoctions of simples which beare the visible colours of bodies decocted, are dead and evanid without the commixtion of Alume, Argol, and the like; and this is also apparent in Chymicall preparations. So Cinaber becomes red by the acide exhalation of sulphur, which otherwise presents a pure and niveous white. So spirits of Salt upon a blew paper make an orient red. So Tartar or vitriol upon an infusion of violets affords a delightfull crimson. Thus it is wonderfull what variety of colours the spirits of Saltpeter, and especially, if they be kept in a glasse while they pierce the sides thereof; I say, what Orient greens they will project: from the like spirits in the earth the plants thereof perhaps acquire their verdure. And from such salary irradiations may those wondrous varieties arise, which are observable in Animalls, as Mallards heads, and Peacocks feathers, receiving intention or alteration according as they are presented unto the light. Thus Saltpeter, Ammoniack and Minerall spirits emit delectable and various colours; and common *Aqua fortis* will in some green and narrow mouthed glasses, about the verges thereof, send forth a deep and Gentianella blew.

Thus have we at last drawne our conjectures unto a period; wherein if our contemplations afford no satisfaction unto others, I hope our attempts will bring no condemnation on our selves; (for besides that adventures in knowledge are laudable, and the assayes of weaker heads affords oftentimes improveable hints unto better) although in this long journey we misse the intended end, yet are there many things of truth discloſed by the way: And the collaterall verity, may unto reasonable speculations, requite the capitall indiscovery.

THE

THE SEVENTH BOOKE.

Concerning many Historicall Tenents generally received, and some deduced from the History of holy Scripture.

CHAP. I.

Of the Forbidden fruit.

THat the Forbidden fruit of Paradise was an Apple, is commonly beleeved, confirmed by Tradition, perpetuated by writings, verses, pictures; and some have been so bad Prosodians, as from thence to derive the Latine word *Malum*; because that fruit was the first occasion of evill, wherein notwithstanding determinations are presumptuous, and many I perceive are of another beleefe; for some have conceived it a Vine, in the mystery of whose fruit lay the expiation of the Transgression: Goropius Becanus reviving the conceit of Barcephas, peremptorily concludeth it to be the Indian Fig-tree, and by a witty Allegory labours to confirme the same. Some fruits we observe to passe under the name of Adams apples, which in common acception admit not that appellation, the one described by Mathiolus under the name of *Pomum Adami*, a very faire fruit, and not unlike a Citron, but somewhat rougher chopt and cranied, vulgarly conceived the markes of Adams teeth; another, the fruit of that plant Serapion termeth *Musa*, but the Easterne Christians commonly the Apples of Paradise; not resembling an apple in figure, and in taste a Melon or Cowcumber; which fruits although they have received appellations suitable unto the Tradition, yet can we not from thence inferre they were this fruit in question; no more then *Arbor vitæ*; so commonly called, to obtaine its name from the tree of life

in Paradiſe, or *arbor Iudæ*, to bee the ſame which ſupplyed the gibbet unto Judas.

Againe, there is no determination in the Text, wherein is only particulared that it was the fruit of a tree good for food and pleaſant unto the eye, in which regards many excell the Apple; and therefore learned men doe wiſely conceive it inexplicable, and Philo puts determination unto deſpaire, when hee affirmeth the ſame kinde of fruit was never produced ſince. Surely, were it not requiſite or reaſonable to have been concealed, it had not paſſed unſpecified, nor the tree revealed which concealed their nakedneſſe, and that concealed which revealed it; for in the ſame Chapter mention is made of Fig-leaves, and the like particulars although they ſeem uncircumſtantiall are oft ſet downe in holy Scripture; ſo is it ſpecified that Elias ſate under a Juniper tree, Abſolon hanged by an Oake, and Zacheus got up into a Sycomore.

And although to condemne ſuch indeterminables, unto him that demanded on what hand Venus was wounded, the Philoſopher thought it a ſufficient reſolution to reinquire upon what leg King Philip halted; and the Jews not undoubtedly reſolved of the Sciatica ſide of Jacob, do cauteloufly in their diet abſtaine from the ſinewes of both; yet are there many nice particulars which may bee authentically determined. That Peter cut off the right eare of Malchus is beyond all doubt. That our Saviour eat the Paſſeover in an upper roome, we may determine from the Text; and ſome we may concede which the Scripture plainly defines not. That the Dyall of Ahaz was placed upon the Weſt ſide of the Temple, wee will not deny, or contradict the deſcription of Adricomius. That Abrahams ſervant put his hand under his right thigh, we ſhall not queſtion; and that the Thiefe on the right hand was ſaved, and the other on the left reprobated, to make good the Method of the laſt Judiciall diſmiſſion, we are ready to admit; but ſurely in vaine we enquire of what wood was Moſes rod, or the tree that ſweetned the waters; or though tradition or humane hiſtory might afford ſome light, whether the crowne of thorns was made of Paliurus, whether the croſſe of Chriſt were made of thoſe foure woods in the Diſticke of Durantes, or only of Oake according unto Lipſius and Goropius, we labour not to determine; for though hereof prudent ſymbolls and pious Allegories be made by wiſer conceivers, yet common heads will flye unto ſuperſtitious applications, and hardly avoid miraculous or magicall expectations.

Pes cedrus eſt, truncus cupreſſus, oliva ſupremum, palmæ, tranſverſum Chriſti ſunt in cruce lignum.

Now the ground or reaſon that occaſioned this expreſſion by an Apple, might be the community of this fruit, and which is often taken for any other. So the Goddeſſe of gardens is termed *Pomona*; ſo the Proverbe expreſſeth it to give Apples unto Alcinous; ſo the fruit which Paris decided was called an Apple; ſo in the garden of Heſperides

rides (which many conceive a fiction drawne from Paradiſe) we read of golden Apples guarded by the Dragon; and to ſpeake ſtrictly in this appellation they placed it more ſafely then any other; for beſide the great variety of Apples, the word in Greeke comprehendeth Orenges, Lemmons, Citrons, Quinces, and as Ruellius defineth, ſuch fruits as have no ſtone within, and a ſoft covering without, excepting the Pomegranate.

It hath been promoted in ſome conſtructions from a paſſage in the Canticles, as it runnes in the vulgar Tranſlation, *Sub arbore malo ſuſcitavi te, ibi corrupta eſt mater tua, ibi violata eſt genetrix tua*; which words notwithſtanding parabollically intended, admit no literall inference, and are of little force in our Tranſlation, I rayſed thee under an Apple tree, there thy mother brought thee forth, there ſhe brought thee forth that bare thee. So when from a basket of Summer fruits, or Apples, as the Vulgar rendreth them, God by Amos foretold the deſtruction of his people, we cannot ſay they had any reference unto the fruit of Paradiſe which was the deſtruction of man; but thereby is declared the propinquity of their deſolation, and that their tranquility was of no longer duration then thoſe horary and ſoon decaying fruits of Summer; nor when it is ſaid in the ſame Tranſlation, *Poma deſiderii animæ tuæ diſceſſerunt à te*, the Apples that thy ſoul luſted after are departed from thee, is there any alluſion therin unto the fruit of Paradiſe? but thereby is threatned unto Babylon, that the pleaſures and delights of their palate ſhould forſake them: and we read in Pierius, that an Apple was the Hieroglyphicke of Love, and that the Statua of Venus was made with one in her hand.

Cant. 8.

Apoc. 14.

Since therefore after this fruit curioſity fruitleſſeſly enquireth, and confidence blindly determineth, we ſhall ſurceaſe our Inquiſition, rather troubled that it was taſted, then troubling our ſelves in its deciſion; this only we obſerve, when things are left uncertaine men will aſſure them by determination; which is not only verified concerning the fruit but the Serpent that perſwaded; many defining the kinde or ſpecies thereof. So Bonaventure and Comeſtor affirme it was a Dragon, Eugubinus a Baſiliske, Delrio a viper, and others a common ſnake, wherein men ſtill continue the deluſion of the Serpent, who having deceived Eve in the maine, ſets her poſterity a worke to miſtake in the circumſtance, and endeavours to propagate errors at any hand; and thoſe he ſurely moſt deſireth which either concern God or himſelf; for they diſhonour God who is abſolute truth and goodneſſe; but for himſelfe, who is extremely evill, and the worſt we can conceive, by aberration of conceit they extenuate his depravity, and aſcribe ſome goodneſſe unto him.

CHAP.

Chap. II.

That a man hath one rib lesse then a woman.

THat a man hath one rib lesse then a woman, is a common conceit derived from the history of Genesis, wherein it stands delivered, that Eve was framed out of a rib of Adam; whence 'tis concluded the sex of man still wants that rib our Father lost in Eve; and this is not onely passant with the many, but was urged against Columbus in an Anatomy of his at Pisa, where having prepared the Sceleton of a woman that chanced to have thirteene ribs of one side, there arose a party that cryed him downe, and even unto oathes affirmed, this was the rib wherein a woman exceeded; were this true, it would autoptically silence that dispute out of which side Eve was framed; it would determine the opinion of Oleaster, that she was made out of the ribs of both sides, or such as from the expression of the Text maintaine there was a plurality required; and might indeed decry the parabolicall exposition of Origen, Cajetan, and such as fearing to concede a monstrosity, or mutilate the Integrity of Adam, preventively conceive the creation of thirteene ribs.

Os ex ossibus meis.

But this will not consist with reason or inspection: for if wee survey the Sceleton of both sexes, and therein the compage of bones, wee shall readily discover that men and women have foure and twenty ribs, that is, twelve on each side, seven greater annexed unto the Sternon, and five lesser which come short thereof, wherein if it sometimes happen that either sex exceed, the conformation is irregular deflecting from the common rate or number, and no more inferrible upon mankinde, then the monstrosity of the son of Rapha, or the vicious excesse in the number of fingers and toes: and although some difference there be in figure, and the female *os inominatum* be somewhat more protuberant, to make a fayrer cavity for the Infant, the coccyx sometime more reflected to give the easier delivery, and the ribs themselves seeme a little flatter, yet are they equall in number. And therefore, while Aristotle doubteth the relations made of Nations which had but seven ribs on a side, and yet delivereth that men have generally no more then eight; as he rejecteth their history, so can we not accept of his Anatomy.

Againe, although we concede there wanted one rib in the Sceleton of Adam, yet were it repugnant unto reason and common observation that his posterity should want the same; for we observe that mutilations are not transmitted from father unto son; the blind begetting such as can see, men with one eye, children with two, and cripples mutilate in their owne persons, do come out perfect in their generations. For, the

the ſeed conveigheth with it not onely the extract and ſingle Idea of every part, whereby it tranſmits their perfections or infirmities, but double and over againe; whereby ſometimes it multipliciouſly delineates the ſame, as in Twins in mixed and numerous generations. And to ſpeake more ſtrictly, parts of the ſeed do ſeeme to containe the Idea and power of the whole; ſo parents deprived of hands, beget manuall iſſues, and the defect of thoſe parts is ſupplyed by the Idea of others. So in one graine of corne appearing ſimilary and inſufficient for a plurall germination, there lyeth dormant the virtuality of many other, and from thence ſometimes proceed an hundred eares: and thus may bee made out the cauſe of multiparous productions; for though the ſeminall materialls diſperſe and ſeparate in the matrix, the formative operator will not delineat a part, but endeavour the formation of the whole; effecting the ſame as farre as the matter will permit, and from devided materials attempt entire formations. And therefore, though wondrous ſtrange, it may not be impoſſible what is confirmed at Lauſdun concerning the Counteſſe of Holland, nor what Albertus reports of the birth of an hundred and fifty, and if we conſider the magnalities of Generation in ſome things, wee ſhall not controvert its poſſibilities in others; nor eaſily queſtion that great worke, whoſe wonders are onely ſecond unto thoſe of the Creation, and a cloſe apprehenſion of the one, might perhaps afford a glimmering light, and crepuſculous glance of the other.

Chap. III.

Of Methuſelah.

WHat hath beene every where opinion'd by all men, and in all times, is more then Paradoxicall to diſpute; and ſo that Methuſelah was the longeſt liver of all the poſterity of Adam we quietly beleeve: but that he muſt needs be ſo, is perhaps below Paralogy to deny. For hereof there is no determination from the Text; wherein it is onely particular'd hee was the longeſt liver of all the Patriarchs whoſe age is there expreſſed, but that he outlived all others we cannot well conclude. For of thoſe nine whoſe death is mentioned before the flood, the Text expreſſeth that Enoch was the ſhorteſt liver, who ſaw but three hundred ſixty five yeares; but to affirme from hence, none of the reſt, whoſe age is not expreſſed, did dye before that time, is ſurely an illation whereto we cannot aſſent.

Againe, many perſons there were in thoſe dayes of longevity, of whoſe age notwithſtanding there is no account in Scripture; as of the race of Caine, the wives of the nine Patriarches, with all the ſons and daughters that every one begat, whereof perhaps ſome perſons might out-

outlive Methuselah; the Text intending onely the masculine line of Seth, conduceable unto the Genealogy of our Saviour, and the antediluvian Chronology. And therefore we must not contract the lives of those which are left in silence by Moses; for neither is the age of Abel expressed in the Scripture, yet is he conceived farre elder then commonly is opinion'd: and if wee beleeve the conclusion of his Epitaph as made by Adam, and so set downe by Salian, *Posuit mœrens pater cui à filio justius positum foret, Anno ab ortu rerum* 130. *ab Abele nato* 129. we shall not need to doubt; which notwithstanding Cajetan and others confirme; nor is it improbable, if wee conceive that Abel was borne in the second yeare of Adam, and Seth a yeare after the death of Abel: for so it being said, that Adam was an hundred and thirty yeares old when he begat Seth, Abel must perish the yeare before, which was one hundred twenty nine.

And if the account of Cain extend unto the Deluge, it may not bee improbable, that some thereof exceeded any of Seth: nor is it unlikely in life, riches, power and temporall blessings, they might surpasse them in this world, whose lives referred unto the next; for so when the seed of Jacob was under affliction and captivity, that of Ismael and Esau flourished and grew mighty, there proceeding from the one twelve Princes, from the other, no lesse then foureteene Dukes and eight Kings. And whereas the age of Cain and his posterity is not delivered in the Text, some doe salve it from the secret method of Scripture, which sometimes wholly omits, but seldome or never delivers the entire duration of wicked and faithlesse persons; as is observable in the history of Esau, and the Kings of Israel and Judah. And therefore, that mention is made that Ismael lived 137. yeares, some conceive he adhered unto the faith of Abraham; for so did others who were not descended from Jacob; for Job is thought to be an Idumean, and of the seed of Esau.

Lastly, (although we rely not thereon) we will not omit that conceit urged by learned men, that Adam was elder then Methuselah, in as much as he was created in the perfect age of Man, which was in those dayes fifty or sixty yeares, for about that time wee reade that they begat children; so that if unto 930. we adde sixty yeares, he will exceed Methuselah. And therefore if not in length of dayes, at least in old age he surpassed others; he was older then all who was never so young as any; for though hee knew old age he was never acquainted with puberty, youth, or Infancy; and so in a strict account he begat children at one yeare old; and if the usuall compute will hold, that men are of the same age which are borne within compasse of the same yeare, Eve was as old as her husband and parent Adam, and Cain their son coetaneous unto both.

Now that conception that no man did ever attaine unto a thousand yeares,

yeares, becauſe none ſhould ever be one day old in the ſight of the Lord, unto whom according to that of David, A thouſand yeares are but as one day, doth not advantage Methuſelah; and being deduced from a popular expreſſion, which will not ſtand a Metaphyſicall and ſtrict examination, is not of force to divert a ſerious enquirer; for unto God a thouſand yeares are no more then one moment, and in his ſight Methuſelah lived no neerer one day then Abel, for all parts of time are alike unto him, unto whom none are referable, and all things preſent, unto whom nothing is paſt or to come; and therefore, although we be meaſured by the Zone of time, and the flowing and continued inſtants thereof, do weave at laſt a line and circle about the eldeſt; yet can we not thus commenſurate the ſphere of Triſmegiſtus, or ſumme up the unſucceſſive and ſtable duration of God.

Chap. IV.

That there was no Rainebow before the Flood.

That there ſhall no Rainebow appeare forty yeares before the end of the world, and that the preceding drought unto that great flame ſhal exhauſt the materials of this Meteor, was an aſſertion grounded upon no ſolid reaſon: but that there was not any in ſixteene hundred yeares, that is, before the flood, ſeemes deduceable from holy Scripture, Gen. 9. I do ſet my bow in the clouds, and it ſhall be for a token of a Covenant betweene me and the earth. From whence notwithſtanding we cannot conclude the noneexiſtence of the Rainebow; nor is that Chronology naturally eſtabliſhed, which computeth the antiquity of effects ariſing from phyſicall and ſetled cauſes, by additionall impoſitions from voluntary determinators. Now by the decree of reaſon and Philoſophy, the Rainebow hath its ground in Nature, and cauſed by the rayes of the Sunne, falling upon a roride and oppoſite cloud; whereof ſome reflected, others refracted beget that ſemicircular variety we generally call the Rainebow; which muſt ſucceed upon concurrence of cauſes and ſubjects aptly prædiſpoſed. And therefore, to conceive there was no Rainebow before, becauſe God choſe this out as a token of the Covenant, is to conclude the exiſtence of things from their ſignalities, or of what is objected unto the ſence, a coexiſtence with that which is internally preſented unto the underſtanding. With equal reaſon we may inferre there was no water before the Inſtitution of Baptiſme, nor bread and wine before the holy Euchariſt.

Againe, while men deny the antiquity of one Rainebow, they anciently concede another. For, beſide the ſolary Iris which God ſhewed unto Noah there is another Lunary, whoſe efficient is the Moone, viſible

ſible onely in the night, moſt commonly at full Moone, and ſome degrees above the Horizon. Now the exiſtence hereof men doe not controvert, although effected by a different Luminary in the ſame way with the other; and probably appeared later, as being of rare appearance and rarer obſervation, and many there are which thinke there is no ſuch thing in Nature. And therefore by caſuall ſpectators they are lookt upon like prodigies, and ſignifications made not ſignified by their natures.

Laſtly, we ſhall not need to conceive God made the Rainebow at this time, if we conſider that in its created and prediſpoſed nature, it was more proper for this ſignification then any other Meteor or celeſtiall appearency whatſoever. Thunder and lightning had too much terrour to have beene tokens of mercy; Comets or blazing Stars appeare too ſeldome to put us in minde of a Covenant to be remembred often, and might rather ſignifie the world ſhould be once deſtroyed by fire, then never againe by water. The Galaxia or milky Circle had beene more probable; for, (beſide that unto the latitude of thirty it becomes their Horizon twice in foure and twenty howres, and unto ſuch as live under the Equator, in that ſpace the whole Circle appeareth) part thereof is viſible unto any ſituation, but being onely diſcoverable in the night and when the ayre is cleere, it becomes of unfrequent and comfortleſſe ſignification. A fixed Starre had not beene viſible unto all the Globe, and ſo of too narrow a ſignality in a Covenant concerning all. But Rainebowes are ſeene unto all the world, and every poſition of ſphere; unto our owne Elevation it may appeare in the morning while the Sunne hath attained about forty five degrees above the Horizon, (which is conceived the largeſt ſemidiameter of any Iris) and ſo in the afternoone when it hath declined unto that altitude againe; which height the Sun not attaining in winter, Rainebowes may happen with us at noone or any time. Unto a right poſition of ſpheare it may appeare three howres after the riſing of the Sun, and three before its ſetting; for the Sun aſcending fifteene degrees an houre, in three attaineth forty five of altitude. Even unto a parallell ſphere, and ſuch as live under the pole, for halfe a yeare ſome ſegments may appeare at any time and under any quarter, the Sun not ſetting, but walking round about them.

But the propriety of its Election moſt properly appeareth in the naturall ſignification and prognoſtick of it ſelfe; as containing a mixt ſignality of raine and faire weather; for being in a roride cloud and ready to drop, it declareth a pluvious diſpoſure in the ayre; but becauſe when it appeares the Sun muſt alſo ſhine, there can bee no univerſall ſhowres, and conſequently no deluge. Thus when the windowes of the great deepe were open, in vaine men lookt for the Rainebow, for at that time it could not be ſeene, which after appeared unto Noah. It

was therefore existent before the flood, and had in Nature some ground of its addition; unto that of Nature God superadded an assurance of his promise, that is, never to hinder its appearance, or so to repleniſh the heavens againe as that we ſhould behold it no more. And thus, without diſparaging the promiſe, it might raine at the ſame time when God ſhewed it unto Noah; thus was there more therein then the Heathens underſtood, when they called it the *Nuncia* of the gods, and the laugh of weeping heaven; and thus may it be elegantly ſaid, I put my Bow, not my Arrow in the clouds, that is, in the menace of Raine the mercy of faire weather.

Riſus ploranti Olympi.

Laudable is the cuſtome of the Jews, who upon the appearance of the Rainebow, doe magnifie the fidelity of God in the memory of his Covenant, according to that of Syracides, Looke upon the Rainebow, and praiſe him that made it. And though ſome pious and Chriſtian pens have onely ſymboliz'd the ſame from the myſtery of its colours, yet are there other affections which might admit of Theologicall alluſions; nor would he finde a more improper ſubject that ſhould conſider, that the colours are made by refraction of light, and the ſhadows that limit that light; that the Center of the Sun, the Rainebow, and the eye of the beholder muſt be in one right line; that the ſpectator muſt be betweene the Sun and the Rainebow; that ſometime three appeare, ſometime one reverſed; with many others, conſiderable in Meteorologicall Divinity, which would more ſenſibly make out the Epithite of the Heathens, and the expreſſion of the ſon of Syrach, very beautifull is the Rainebow, It compaſſeth the heaven about with a glorious circle, and the hands of the moſt High have bended it.

Thaumantias.

Chap. V.

Of Sem, Ham and Japhet.

Concerning the three ſons of Noah, Sem, Ham and Japhet, that the order of their nativity was according to that of numeration, and Japhet the youngeſt ſon, as moſt beleeve, as Auſtin and others account, the ſons of Japhet and Europeans need not grant; nor will it ſo well concord unto the letter of the Text, and its readieſt Interpretations: For, ſo is it ſaid in our Tranſlation, Sem the father of all the ſons of Heber, the brother of Japhet the elder; ſo by the Septuagint, and ſo by that of Tremellius; and therefore when the Vulgar reades it, *Fratre Iaphet majore*, the miſtake, as Junius obſerveth, might be committed by neglect of the Hebrew accent, which occaſioned Jerom ſo to render it, and many after to beleeve it. Nor is that argument contemptible which is deduced from their Chronology; for probable it is, that

Noah had none of them before, and begat them from that yeare when it is ſaid hee was five hundred yeares old and begat Sem, Ham, and Japhet; Againe, it is ſaid he was ſixe hundred yeares old at the flood, and that two yeares after Sem was but an hundred, therefore Sem muſt be borne when Noah was five hundred and two, and ſome other before in the yeare of five hundred and one.

Now whereas the Scripture affordeth the priority of order unto Sem, we cannot from thence inferre his primogeniture; for in Sem the holy line was continued, and therefore however borne, his genealogy was moſt remarkeable. So is it not unuſuall in holy Scripture to nominate the younger before the elder; ſo is it ſaid, That Tarah begat Abraham, Nachor, and Haram; whereas Haram was the eldeſt. So Rebecca is termed the mother of Jacob and Eſau. Nor is it ſtrange the younger ſhould be firſt in nomination, who have commonly had the priority in the bleſſings of God, and been firſt in his benediction. So Abel was accepted before Cain, Abraham the younger, preferred before Iſmael the elder, Jacob before Eſau, Joſeph was the youngeſt of twelve, and David the eleventh ſon, and but the caddet of Jeſſe.

Gen. 11.

Gen. 28.

Laſtly, though Japhet were not elder then Sem, yet muſt we not affirme that he was younger then Cham, for it is plainely delivered, that after Sem and Japhet had covered Noah, he awaked, and knew what his youngeſt ſon had done unto him. υἱὸς ὁ νεώτερος, is the expreſſion of the Septuagint, *Filius minor* of Jerome, and *minimus* of Tremellius. And upon theſe grounds perhaps Joſephus doth vary from the Scripture enumeration, and nameth them Sem, Japhet, and Cham, which is alſo obſerved by the Annian Beroſus; *Noah cum tribus filiis, Semo, Iapeto, Chem.* And therefore although in the priority of Sem and Japhet there may be ſome difficulty, though Cyrill, Epiphanius, and Auſtin have accounted Sem the elder, and Salian the Annaliſt, and Petavius the Chronologiſt contend for the ſame, yet Cham is more plainly and confeſſedly named the youngeſt in the Text.

Chap. VI.

That the Tower of Babel was erected againſt a ſecond deluge.

An opinion there is of ſome generality, that our fathers after the Flood attempted the tower of Babel to ſecure themſelves from a ſecond Deluge. Which however affirmed by Joſephus and others, hath ſeemed improbable unto many who have diſcourſed hereon. For, (beſide that they could not be ignorant of the promiſe of God never to drowne the world againe, and had the Rainebow before their eyes to

to put them in minde thereof) it is improbable from the nature of the Deluge, which being not possibly causable from naturall showres above, or watery eruptions below, but requiring a supernaturall hand, and such as all acknowledge irresistible; wee must disparage their knowledge and judgement in so succesless attempts.

Againe, they must probably heare, and some might know, that the waters of the flood ascended fifteene cubits above the highest mountaines. Now, if as some define, the perpendicular altitude of the highest mountaines bee foure miles, or as others, but fifteene furlongs, it is not easily conceived how such a structure could bee effected; except wee receive the description of Herodotus concerning the Tower of Belus, whose first tower was eight furlongs higher, andeight more built upon it; except we beleeve the Annian Berosus, or the traditionall relation of Jerome.

It was improbable from the place, that is a plaine in the land of Shinar. And if the situation of Babylon were such at first as it was in the dayes of Herodotus, it was rather a seat of amenity and pleasure, then conducing unto this intention; it being in a very great plaine, and so improper a place to provide against a generall Deluge by towers and eminent structures, that they were faine to make provisions against particular and annuall inundations by ditches and trenches, after the manner of Ægypt. And therefore Sir Walter Ralegh accordingly objecteth; If the Nations which followed Nimrod, still doubted the surprise of a second flood, according to the opinions of the antient Hebrewes, it soundeth ill to the eare of Reason, that they would have spent many yeares in that low and overflowne valley of Mesopotamia. And therefore in this situation, they chose a place more likely to have secured them from the worlds destruction by fire, then another Deluge of water, and as Pierius observeth, some have conceived that this was their intention.

Lastly, the reason is delivered in the Text. Let us build us a City and a Tower, whose top may reach unto heaven, and let us make us a name, lest wee be scattered abroad upon the whole earth, as wee have already began to wander over a part. These were the open ends proposed unto the people, but the secret designe of Nimrod, was to settle unto himselfe a place of dominion, and rule over the rest of his brethren, as it after succeeded, according to the delivery of the Text, The beginning of his kingdome was Babel.

CHAP.

Chap. VII.

Of the Mandrakes of Leah.

WEE ſhall not omit the Mandrakes of Leah, according to the Hiſtory of Geneſis. And Reuben went out in the dayes of Wheat-harveſt and found Mandrakes in the field, and brought them unto his mother Leah; then Rachel ſaid unto Leah, Give me, I pray thee, of thy ſonnes Mandrakes, and ſhe ſaid unto her, Is it a ſmall matter that thou haſt taken my husband, and wouldeſt thou take my ſons Mandrakes alſo? and Rachel ſaid, therefore he ſhall lye with thee this night for thy ſonnes Mandrakes; from whence hath ariſen a common conceit, that Rachel requeſted theſe plants as a medicine of fecundation, or whereby ſhe might become fruitfull; which notwithſtanding is very queſtionable, and of incertaine truth.

For firſt from the compariſon of one Text with another, whether the Mandrakes here mentioned, be the ſame plant which holds that name with us there is ſome cauſe to doubt; the word is uſed in another place of Scripture, when the Church inviting her beloved into the fields, among the delightfull fruits of Grapes and Pomegranats, it is ſaid, the Mandrakes give a ſmell, and at our gates are all manner of pleaſant fruits. Now inſtead of a ſmell of delight, our Mandrakes afford a papaverous and unpleaſant odour, whether in the leafe or apple as is diſcoverable in their ſimplicity or mixture; the ſame is alſo dubious from the different interpretations: for though the Septuagint and Joſephus doe render it the Apples of Mandrakes in this Text yet in the other of the Canticles the Chaldy Paraphraſe tearmeth it Ballame. R. Solomon, as Druſius obſerveth, conceives it to be that plant the Arabians named Jeſemin. Oleaſter and *Georgius Venetus* the Lilly; and that the word *Dudaim*, may comprehend any plant that hath a good ſmell, reſembleth a womans breaſt, and flouriſheth in wheat harveſt; Junius and Tremellius interpret the ſame for any amiable flowers of a pleaſant and delightfull odour: but the Geneva Tranſlators have been more wary then any; for although they retaine the word Mandrake in the Text, they in effect retract it in the Margine, wherein is ſet downe, The word in the originall is *Dudaim*, which is a kinde of fruit or flower unknowne.

Cant. 7.

Nor ſhall we wonder at the diſſent of expoſition, and difficulty of definition concerning this Text, if we perpend how variouſly the vegetables of Scripture are expounded, and how hard it is in many places to make out the ſpecies determined. Thus are we at variance concerning the plant that covered Jonas, which though the Septuagint doth render Colocynthis, the Spaniſh Calabaca, and ours accordingly a gourd, yet the vulgar tranſlates it Hedera or Juice; and, as Grotius obſerveth,

ſerveth, Jerome thus tranſlated it, not as the ſame plant but beſt apprehended thereby. The Italian of Diodati and that of Tremellius have named it Ricinus, and ſo hath ours in the Margine; for *palma Chriſti* is the ſame with Ricinus. The Geneva Tranſlators have herein been alſo circumſpect; for they have retained the originall word *Kikaion*, and ours hath alſo affixed the ſame unto the Margine: nor are they indeed alwayes the ſame plants which are delivered under the ſame name, and appellations commonly received amongſt us; ſo when it is ſaid of Solomon that hee writ of plants from the Cedar of Lebanus, unto the Hyſop that groweth upon the wall, that is from the greateſt unto the ſmalleſt, it cannot be well conceived our common hyſop; for neither is that the leaſt of vegetables, nor obſerved to grow upon walls; but rather as Lemnius well conceiveth ſome kinde of the capillaries, which are very ſmall plants and only grow upon walls and ſtony places; nor are the faire ſpecies in the holy oyntment, Cinnamon, Myrrhe, Calamus and Caſſia; nor the other in the holy perfume, Frankinſence, Stacte, Onycha, and Galbanum, ſo agreeably expounded unto thoſe in uſe with us, as not to leave conſiderable doubts behinde them; nor muſt that perhaps be taken for a ſimple unguent, which Matthew onely tearmeth a pretious oyntment, but rather a compoſition, as Marke and John imply by piſtick Nard, that is faithfully diſpenſed; and as Mathiolus obſerveth in his Epiſtles, may be that famous compoſition deſcribed by Dioſcorides, made of oyle of Ben, Malabathrum, Juncus odoratus, Coſtus, Amomum, Myrrhe, Balſam and Nard; which Galen affirmeth to have been in uſe with the delicate Dames of Rome, and that the beſt thereof was made at Laodicea, from whence by Merchants it was conveyed unto other parts; but how to make out that Tranſlation concerning the Tithe of Mint, Aniſe, and Cumin, we are ſtill to ſeek; for we finde not a word in the Text that can properly bee rendred Aniſe, the Greeke being Ανηθον, which the Latines call *Anethum*, and is properly Engliſhed Dill.

Againe, it is not deducible from the Text or concurrent ſentence of Comments, that Rachel had any ſuch intention, and moſt doe reſt in the determination of Auſtine, that ſhe deſired them for rarity, pulchritude or ſuavity; nor is it probable ſhee would have reſigned her bed unto Leah, when at the ſame time ſhe had obtained a medicine to fructifie her ſelfe, and therefore Druſius who hath expreſſely and favourably treated hereof, is ſo farre from conceding this intention, that he plainly concludeth *hoc quo modo illis in mentem venerit conjicere nequeo*; how this conceit fell into mens minds it cannot fall into mine, for the Scripture delivereth it not, nor can it bee clearely deduced from the Text.

Thirdly, if Rachel had any ſuch intention, yet had they no ſuch effect, for ſhe conceived not many yeares after of Joſeph; whereas in the

the meane time Leah had three children, Iſachar, Zabulon, and Dinah.

Laſtly, although at that time they failed of this effect, yet is it mainly queſtionable whether they had any ſuch vertue either in the opinions of thoſe times or in their proper nature; that the opinion was popular in the land of Canaan it is improbable, and had Leah underſtood thus much ſhe would not ſurely have parted with fruits of ſuch a faculty, eſpecially unto Rachel who was no friend unto her. As for its proper nature, the Ancients have generally eſteemed it Narcotick or ſtupefactive, and is to be found in the liſt of poyſon ſet downe by Dioſcorides, Galen, Ætius, Ægineta, and ſeverall Antidotes delivered by them againſt it. It was I confeſſe from good Antiquity, and in the dayes of Theophraſtus accounted a philtre, or plant that conciliates affection, and ſo delivered by Dioſcorides; and this intent might ſeem more probable, had they not been the wives of holy Jacob, had Rachel preſented them unto him, and not requeſted them for her ſelfe.

Now what Dioſcorides affirmeth in favour of this effect, that the graines of the Apples of Mandrakes mundifie the Matrix and applied with ſulphur ſtop the fluxes of women, he overthrows by qualities deſtructive unto conception; affirming alſo that the juice thereof purgeth upward like Hellebore, and applyed in peſſaries provokes the menſtruous flowes and procures abortion. *Petrus Hiſpanus*, or Pope John the twentieth ſpeakes more directly in his *Theſaurus pauperum*; wherein among the receits of fæcundation, he experimentally commendeth the wine of Mandrakes given with *Triphera Magna*: but the ſoule of the medicine may lye in *Triphera magna*, an excellent compoſition, and for this effect commended by Nicolaus. And whereas Levinus Lemnius that eminent Phyſitian doth alſo concede this effect it is from manifeſt cauſes and qualities elementall occaſionally producing the ſame; for he imputeth the ſame unto the coldneſſe of that ſimple, and is of opinion that in hot climates, and where the uterine parts exceeed in heat, by the coldneſſe hereof they may bee reduced into a conceptive conſtitution, and Craſis accommodable unto generation; whereby indeed we will not deny the due and frequent uſe may proceed unto ſome effect, from whence notwithſtanding wee cannot inferre a fertiliating condition or property of fecundation: for in this way all vegetables doe make fruitfull according unto the complexion of the Matrix; if that excell in heat, plants exceeding in cold doe rectifie it, if it be cold, ſimples that are hot reduce it, if dry moiſt, if moiſt dry correct it, in which diviſion all plants are comprehended; but to diſtinguiſh thus much is a point of Art, and beyond the method of Rachels or feminine Phyſicke. Againe, whereas it may be thought that Mandrakes may fecundate ſince Poppy hath obtained the Epithite of fruitfull, and that fertility was hieroglyphically deſcribed, by Venus

with

with an head of poppy in her hand; the reason hereof, was the multitude of seed within it selfe, and no such multiplying in humane generation. And lastly, whereas they may well have this quality, since Opium it selfe is conceived to extimulate unto venery, and for that intent is sometimes used by Turkes, Persians, and most orientall Nations; although Winclerus doth seem to favour the conceit, yet Amatus Lusitanus, and *Rodericus a Castro* are against it, *Garcias ab Horto* refutes it from experiment; and they speake probably who affirme, the intent and effect of eating Opium, is not so much to invigorate themselves in coition, as to prolong the Act, and spinne out the motions of carnality.

Chap. VIII.

Of the three Kings of Collein.

A Common conceit there is of the three Kings of Collein, conceived to be the wise men that travelled unto our Saviour by the direction of the Star; wherein omitting the large Discourses of Baronius, Pineda, and Montacutius, That they might be Kings, beside the ancient Tradition and authority of many Fathers, the Scripture also implyeth. The Gentiles shall come to thy light, and Kings to the brightnesse of thy rising. The Kings of Tharsis and the Isles, the Kings of Arabia and Saba shall offer gifts, which places most Christians and many Rabbines interpret of the Messiah. Not that they are to be conceived potent Monarchs, or mighty Kings, but Toparks, Kings of Cities or narrow territories, such as were the Kings of Sodome and Gomorrah, the Kings of Jericho and Ai, the one and thirty which Josuah subdued, and such as some conceive the friends of Job to have been.

But although we grant they were Kings, yet can we not bee assured they were three: for the Scripture maketh no mention of any number, and the number of their presents, Gold, Myrrh and Frankinscence, concludeth not the number of their persons; for these were the commodities of their Country, and such as probably the Queen of Sheba in one person had brought before unto Solomon; and so did not the sons of Jacob divide the present unto Joseph, but are conceived to carry one for them all, according to the expression of their father, Take of the best fruits of the land in your vessells, and carry downe the man a present: and therefore their number being uncertaine, what credit is to be given unto their names, Gaspar, Melchior, Balthazar? what to the charme thereof against the falling sickneſſe? or what unto their habits, complexions, and corporall accidents, wee must relye on their un-

certain ſtory, and authenticke pourtraits of Collein. Laſtly, although we grant them Kings, and three in number, yet could wee not conceive that they were Kings of Collein. For though Collein were the chiefe City of the *Vbii*, then called *Vbiopolis*, and afterwards *Agrippina*, yet will no hiſtory informe us there were three Kings thereof. Beſide theſe being rulers in their Countries, and returning home would have probably converted their ſubjects; but according unto Munſters report, their converſion was not wrought untill ſeventy yeares after by Maternus a diſciple of Peter. And laſtly, it is ſaid that the wiſe men came from the Eaſt; but Collein is ſeated Weſt-ward from Jeruſalem, for Collein hath of longitude thirty foure degrees, but Jeruſalem ſeventy two.

The ground of all was this; theſe wiſe men or Kings, were probably of Arabia, and deſcended from Abraham by Keturah, who apprehending the myſtery of this ſtarre, either by the Spirit of God, the propheſie of Balaam, the propheſie, which Suetonius mentions, received and conſtantly believed through all the Eaſt, that out of Jury one ſhould come that ſhould rule the whole world; or the divulged expectancy of the Jewes from the expiring prediction of Daniel, were by the ſame conducted unto Judea, returned into their Country, and were after baptiſed by Thomas; from whence about three hundred yeares after, by Helena the Empreſſe their bodies were tranſlated to Conſtantinople, from thence by Euſtathius unto Millane, and at laſt by Renatus the Biſhop unto Collein; where they are beleeved at preſent to remaine, their monuments ſhowne unto ſtrangers, and having loſt their Arabian titles, are crowned Kings of Collein.

Chap. IX.

Of the food of John Baptiſt, Locuſts and wilde hony.

Concerning the food of John Baptiſt in the wilderneſſe, Locuſts and wilde hony, leſt popular opiniatrity ſhould ariſe, we will deliver the chiefe opinions; the firſt conceiveth the Locuſts here mentioned to be that fruit the Greeks name κεράτιον, mentioned by Luke in the dyet of the Prodigall ſonne, the Latins *Siliqua*, and ſome, *Panis Sancti Iohannis*, included in a broad Cod, and indeed of taſte almoſt as pleaſant as honey. But this opinion doth not ſo truly impugne that of the Locuſts; and might rather call into controverſie the meaning of wilde honey.

The ſecond affirmeth they were the tops or tender crops of trees; for ſo *Locuſta* alſo ſignifieth: which conceit is plauſible in Latin, but wil not hold in Greek, wherein the word is Ακρὶς, except for ἀκρίδες, we read ἀκρέδρυα,

ἀκρίδρυα, or Ακρέμονες, which signifie the extremities of trees; of wch belief have divers been; more confidently Isidore Pelusiota, who in his Epistles plainly affirmeth they thinke unlearnedly who are of another beliefe; and this so wrought upon Baronius that he concludeth in a newtrality, *Hæc cum scribat Isidorus definiendum nobis non est, & totum relinquimus lectoris arbitrio; nam constat Græcam dictionem* Akeides, *& Locustam insecti genus, & arborum summitates significare. Sed fallitur*, saith *Montacutius, nam constat contrarium,* Akeida *apud nullum authorem classicum* Akridrua *significare.* But above all Paracelsus with most animosity promoteth this opinion, and in his book *de melle*, spareth not his friend Erasmus. *Hoc à nonnullis ita explicatur ut dicant Locustas aut cicadas Iohanni pro cibo fuisse; sed hi stultitiam dissimulare non possunt, veluti Ieronymus, Erasmus, & alii prophetæ Neoterici in Latinitate immortui.*

A third affirmeth that they were properly Locusts, that is a sheath-winged and six-footed insect, such as is our Grashopper; and this opinion seems more probable then the other: for beside the authority of Origen, Jerome, Chrysostome, Hillary, and Ambrose to confirme it, this is the proper signification of the word, thus used in Scripture by the Septuagint, Greeke vocabularies thus expound it; Suidas on the word Akeis observes it to be that animall whereon the Baptist fed in the desart; in this sense the word is used by Aristotle, Dioscorides, Galen, and severall humane Authors. And lastly, there is no absurdity in this interpretation, or any solid reason why we should decline it; it being a food permitted unto the Jewes, whereof foure kindes are reckoned up among cleane meats. Beside, not onely the Jewes, but many other Nations long before and since, have made an usuall food thereof. That the Æthiopians, Mauritanians, and Arabians, did commonly eat them is testified by Diodorus, Strabo, Solinus, Ælian and Plinie; that they still feed on them is confirmed by Leo, Cadamustus and others. John therefore as our Saviour saith, came neither eating nor drinking, that is farre from the dyet of Jerusalem and other riotous places; but fared coursely and poorely according unto the apparrell he wore, that is of Camells haire; the place of his abode, the wildernesse; and the doctrine he preached, humilation and repentance.

Chap. X.

That John the Evangelist should not dye.

THe conceit of the long living or rather not dying of John the Evangelist is not to be omitted; and although it seem inconsiderable, and not much weightier then that of Joseph the wandring Jew; yet being deduced from Scripture, and abetted by Authors of all times, it

shall not escape our enquiry. It is drawne from the speech of our Saviour unto Peter after the prediction of his martyrdome; Peter saith unto Jesus, Lord, and what shall this man do? Iesus saith unto him, If I will that he tarry untill I come, what is that to thee? follow thou me; then went this saying abroad among the brethren that this disciple should not dye.

John 21.

Now the apprehension hereof hath been received either grossely and in the generall, that is not distinguishing the manner or particular way of this continuation, in which sense probably the grosser and undiscerning party received it; or more distinctly apprehending the manner of his immortality; that is, that Iohn should never properly dye, but be translated into Paradise, there to remaine with Enoch and Elias untill about the comming of Christ, and should be slaine with them under Antichrist, according to that of the Apocalyps. I will give power unto my two witnesses, and they shall prophesie a thousand two hundred and threescore dayes cloathed in sackcloath, and when they shall have finished their Testimony, the beast that ascendeth out of the bottomelesse pit, shall make warre against them, and shall overcome them and kill them. Hereof, as Baronius observeth, within three hundred yeares after Christ, Hippolytus the martyr was the first assertor, but hath been maintained by many since; by Metaphrastes, by Freculphus, but especially by Georgius Trapezuntius, who hath expresly treated upon this Text; and although he lived but in the last Centurie, did still affirme that Iohn was not yet dead.

12.

As for the grosse opinion that he should not dye, it is unto my judgement sufficiently refuted by that which first occasioned it, that is the Scripture it selfe, and no further of, then the very subsequent verse: yet Iesus said not unto him he should not dye, but if I will that he tarry till I come, what is that to thee? and this was written by Iohn himself whom the opinion concerned, and as is conceived many yeares after when Peter had suffered, and fulfilled the Prophesie of Christ.

For the particular conceit the foundation is weake, nor can it bee made out from the Text alleadged in the Apocalyps: for beside that therein two persons are onely named, no mention is made of Iohn a third Actor in this Tragedy; the same is overthrowne by History, which recordeth not onely the death of Iohn, but assigneth the place of his buriall, that is Ephesus a City in Asia minor; whither after hee had beene banished into Patmos by Domitian hee returned in the reigne of Nerva there deceased, and was buried in the dayes of Trajan, and this is testified by Ierome *de Scriptoribus Ecclesiasticis*, by Tertullian *de Anima*, by Chrysostome, and by Eusebius, in whose dayes his Sepulchre was to be seen; and by a more ancient Testimony alleadged also by him, that is of Polycrates Bishop of Ephesus, not many successions after Iohn; whose words are these in an Epistle unto Victor

Bishop

Bishop of Rome, *Iohannes ille qui supra pectus Domini recumbebat Doctor optimus apud Ephesum dormivit*; many of the like nature are noted by Baronius, Jansenius, Estius, Lipellous, and others.

Now the maine and primitive ground of this error, was a grosse mistake in the words of Christ, and a false apprehension of his meaning; understanding that positively which was conditionally expressed, or receiving that affirmatively which was but concessively delivered; for the words of our Saviour runne in a doubtfull straine, rather reprehending then satisfying the curosity of Peter; that is, as though he should have said, Thou hast thine owne doome, why enquirest thou after thy brothers? what reliefe unto thy affliction will be the society of anothers? why pryest thou into the secrets of Gods judgements? if he stay untill I come, what concerneth it thee? who shalt bee sure to suffer before that time? and such an answer probably he returned because he foreknew Iohn should not suffer a violent death, but goe unto his grave in peace; which had Peter assuredly knowne, it might have cast some water on his flames, and smothered those fires which kindled after unto the honour of his Master.

Now why among all the rest, Iohn only escaped the death of a Martyr, the reason is given; becaus all other fled away or withdrew themselves at his death, and he alone of the Twelve beheld his passion on the Crosse; wherein notwithstanding, the affliction that he suffered could not amount unto lesse then Martyrdome: for if the naked relation, at least the intentive consideration of that passion, be able still and at this disadvantage of time, to rend the hearts of pious contemplators; surely the neare and sensible vision thereof must needs occasion agonies beyond the comprehension of flesh, and the trajections of such an object more sharpely pierce the martyr'd soule of Iohn, then afterward did the nayles the crucified body of Peter.

Againe, they were mistaken in the Emphaticall apprehension, placing the consideration upon the words, If I will, whereas it properly lay in these, when I come: which had they apprehended as some have since, that is, not for his ultimate and last returne, but his comming in judgement and destruction upon the Iewes; or such a comming as it might be said, that that generation should not passe before it was fulfilled: they needed not, much lesse need we suppose such diuturnity; for after the death of Peter, Iohn lived to behold the same fulfilled by Vespasian: nor had he then his *Nunc dimittis*, or went out like unto Simeon; but old in accomplisht obscurities, and having seen the expire of Daniels prediction, as some conceive, he accomplished his Revelation.

But besides this originall, and primary foundation, divers others have made impressions according unto different ages and persons by whom they were received; for some established the conceit in the disciples

ciples and brethren, which were contemporary unto him, or lived about the same time with him; and this was first the extraordinary affection our Saviour bare unto this disciple, who hath the honour to bee called the disciple whom Iesus loved. Now from hence they might be apt to beleeve their Master would dispence with his death, or suffer him to live to see him returne in glory, who was the onely Apostle that beheld him to dye in dishonour. Another was the beliefe and opinion of those times that Christ would suddenly come; for they held not generally the same opinion with their successors, or as descending ages after so many Centuries, but conceived his comming would not be long after his passion, according unto severall expressions of our Saviour grossely understood, and as we finde the same opinion not long after reprehended by St. Paul; and thus conceiving his comming would not be long, they might be induced to believe his favourite should live unto it. Lastly, the long life of Iohn might much advantage this opinion; for he survived the other Twelve, he was aged 22 yeares when he was called by Christ, and 25 that is the age of Priesthood at his death, and lived 93 yeares, that is 68 after his Saviour, and dyed not before the second yeare of Trajane.. Now having outlived all his fellows, the world was confirmed he might live still, and even unto the comming of his Master.

Theff, 2.

The grounds which promoted it in succeeding ages were especially two; the the first his escape of Martyrdome: for whereas all the rest suffered some kinde of forcible death, we have no history that he suffered any; and men might thinke he was not capable thereof, for so, as History hath related, by the command of Domitian he was cast into a Cauldron of burning oyle, and came out againe unsinged. Now future ages apprehending hee suffered no violent death, and finding also the means that tended thereto could take no place, they might bee confirmed in their opinion that death had no power over him, and easily beleeve he might live alwayes who could not be destroyed by fire, and resist the fury of that Element which nothing shall resist. The second was a corruption crept into the Latine Text, reading for *Si, Sic eum manere volo*, whereby the answer of our Saviour becommeth positive, or that he will have it so, which way of reading was much received in former ages, and is still retained in the vulgar Translation; but in the Greek & original, the word is ἐὰν, signifying *Si* or if, which is very different from οὕτως, and cannot bee translated for it: and answerable hereunto is the translation of Iunius and Tremellius, and that also annexed unto the Greeke by the authority of *Sixtus quintus*.

The third confirmed it in ages farther descending, and proved a powerfull argument unto all others following; that in his tombe at Ephesus there was no corps or relique thereof to be found; whereupon arised divers doubts, and many suspitious conceptions, some beleeving

leeving he was not buried, ſome that he was buried, but riſen againe; others, that he deſcended alive into his tombe, and from thence departed after. But all theſe proceeded upon unveritable grounds, as Baronius hath obſerved, who alledgeth a letter of Celeſtine Biſhop of Rome, unto the Councell of Epheſus, wherein he declareth the reliques of John were highly honoured by that City, and a paſſage alſo of Chryſoſtome in the Homilies of the Apoſtles. That John being dead did cures in Epheſus, as though he were ſtill alive. And ſo I obſerve that Eſthius diſcuſſing this point concludeth hereupon, *Quod corpus ejus nunquam reperiatur, hoc non dicerent ſi veterum ſcripta diligenter perluſtraſſent.*

Now that the firſt ages after Chriſt, thoſe ſucceeding, or any other ſhould proceed into opinions ſo farre devided from reaſon, as to thinke of Immortality after the fall of Adam, or conceit a man in theſe later times ſhould out-live our fathers in the firſt, although it ſeeme very ſtrange, yet is it not incredible, for the credulity of men hath beene deluded into the like conceits, and as Ireneus and Tertullian have made mention, one Menander a Samaritan obtained beliefe in this very point, whoſe doctrine it was that death ſhould have no power on his diſciples, and ſuch as received his baptiſme, ſhould receive Immortality therewith: 'Twas ſurely an apprehenſion very ſtrange; nor uſually falling either from the abſurdities of Melancholy or vanities of ambition; ſome indeed have beene ſo affectedly vaine as to counterfeit Immortality, and have ſtolne their death in a hope to be eſteemed immortall; and others have conceived themſelves dead: but ſurely few or none have falne upon ſo bold an errour, as not to thinke that they could dye at all. The reaſon of thoſe mighty ones, whoſe ambition could ſuffer them to be called gods, would never be flattered into Immortality, but the proudeſt thereof, have by the daylie dictates of corruption convinced the impropriety of that appellation. And ſurely, although deluſion may runne high, and poſſible it is that for a while a man may forget his nature, yet cannot this be durable, for the inconcealeable imperfections of our ſelves, or their dayly examples in others, will hourely prompt us our corruptions, and lowdly tell us we are the ſons of earth.

Chap. XI.

More compendiouſly of ſome others.

MAny others there are which we reſigne unto Divinity, and perhaps deſerve not controverſie. Whether David were puniſhed onely for pride of heart in numbring the people, as moſt doe hold, or whether

whether as Josephus and many maintaine, he suffered also for not performing the commandement of God concerning capitation, that when
Exod. 30. the people were numbred, for every head they should pay unto God a shekell, we shall not here contend. Surely, if it were not the occasion of this plague, wee must acknowledge the omission thereof was threatned with that punishment, according to the words of the Law. When thou takest the summe of the children of Israel, then shall they give every man a ransome for his soule unto the Lord, that there be no plague amongst them. Now, how deepely hereby God was defrauded in the time of David, and opulent State of Israel, will easily appeare
Exod. 38. by the summes of former lustrations. For in the first, the silver of them that were numbred was an hundred Talents, and a thousand seven hundred threescore and fifteene shekels; a Bekah for every man, that is, halfe a shekel, after the shekel of the Sanctuary; for every one from twenty yeares old and upwards, for six hundred thousand, and three thousand and five hundred and fifty men. Answerable whereto wee reade in Josephus, Vespasian ordered that every man of the Jews should bring into the Capitoll two dragmes, which amounts unto fifteene pence, or a quarter of an ounce of silver with us, and is equivalent unto a Bekah, or halfe a shekell of the Sanctuary. For, an Attick dragme is seven pence halfe penny, or a quarter of a shekell, and a didrachmum or double dragme, is the word used for Tribute money, or halfe a shekell; and a stater the money found in the fishes mouth was two Didrachmums, or an whole shekell, and tribute sufficient for our Saviour and for Peter.

We will not question the Metamorphosis of Lots wife, or whether she were transformed into a reall statua of salt: though some conceive that expression Metaphoricall, and no more thereby then a lasting and durable columne; according to the nature of salt, which admitteth no corruption; in which sence the covenant of God is termed a Covenant of Salt; and it is also said, God gave the kingdome unto David for ever, or by a covenant of Salt.

That Absalon was hanged by the haire of the head, and not caught up by the neck, as Josephus conceiveth, and the common argument against long hair affirmeth, we are not ready to deny. Although I confesse a great and learned party there are of another opinion; although if he had his Morion or helmet on, I could not well conceive it; although the Translation of Jerome or Tremellius do not prove it, and our owne seemes rather to overthrow it.

That Judas hanged himselfe, much more that he perished thereby, we shall not raise a doubt. Although Jansenius discoursing the point, produceth the testimony of Theophylact and Euthymius, that he died not by the Gallowes, but under a Cart wheele; and Baronius also delivereth this was the opinion of the Greeks, and derived as high as

Papias,

Papias, one of the Disciples of John, although how hardly the expression of Mathew is reconcilable unto that of Peter, and that he plainely hanged himselfe, with that that falling headlong he burst asunder in the midst, with many other, the learned Grotius plainely doth acknowledge. And lastly, although as hee also urgeth the word ἀπάγξασθο in Mathew, doth not onely signifie suspension, or pendelous illaqueation, as the common picture describeth it, but also suffocation, strangulation or interception of breath, which may arise from griefe, despaire, and deepe dejection of spirit, in which sence it is used in the history of Tobit concerning Sara, ἐλυπήθη σφόδρα ὥστε ἀπάγξασθαι. *Ita tristata est ut strangulatione premeretur*, saith Junius; and so might it happen from the horrour of mind unto Judas. And so doe many of the Hebrewes affirme, that Achitophell was also strangled, that is, not from the rope, but passion. For the Hebrew and Arabick word in the Text not onely signifies supension, but indignation, as Grotius hath also observed.

Many more there are of indifferent truths, whose dubious expositions worthy Divines and Preachers doe often draw into wholesome and sober uses, whereof nevertheless we shall not speake; with industry we decline such paradoxies, and peaceably submit unto their received acceptions.

Chap. XII.

Of the cessation of Oracles.

That Oracles ceased or grew mute at the comming of Christ, is best understood in a qualified sense and not without all latitude; as though precisely there were none after, nor any decay before. For what we must confesse unto relations of Antiquity; some pre-decay is observable from that of Cicero urged by Baronius; *Cur isto modo jam oracula Delphis non eduntur, non modo nostra ætate, sed jam diu, ut nihil possit esse contemptius.* That during his life they were not altogether dumbe, is deduceable from Suetonius in the life of Tiberius, who attempting to subvert the Oracles adjoyning unto Rome, was deterred by the Lots or chances which were delivered at Prenestе; After his death wee meet with many; Suetonius reports, that the Oracle of Autium forewarned Caligula to beware of Cassius, who was one that conspired his death. Plutarch enquiring why the Oracles of Greece ceased, excepteth that of Lebadia; and in the same place Demetrius affirmeth the Oracles of Mopsus and Amphilochus were much frequented in his dayes; In briefe, histories are frequent in examples, and there want not some even to the reigne of Iulian.

That therefore wee may consist with history; by cessation of Ora-

cles, with Montacutius we may understand their intercision, not absision or consummate desolation; their rare delivery not a totall dereliction: and yet in regard of divers Oracles, we may speake strictly, and say there was a proper Cessation. And thus may wee reconcile the accounts of times, and allow those few and broken Divinations, whereof we reade in story and undeniable Authors. For that they received this blow from Christ, and no other causes alledged by the Heathens, from oraculous confession they cannot deny; whereof upon record there are some very remarkeable. The first that Oracle of Delphos delivered unto Augustus.

Me puer Hebræus Divos Deus ipse gubernans
Cedere sede jubet, tristemq; redire sub orcum;
Aris ergo dehinc tacitus discedito nostris.

An Hebrew child, a God all gods excelling,
To hell againe commands me from this dwelling.
Our Altars leave in silence, and no more
A resolution 'ere from hence implore. A second recorded by Plutarch, of a voyce that was heard to cry unto Mariners at the Sea, Great Pan is dead; which is a relation very remarkeable, and may be read in his Defect of Oracles. A third reported by Eusebius in the life of his magnified Constantine; that about that time Apollo mourned, declaring his Oracles were false, and that the righteous upon earth did hinder him from speaking truth. And a fourth related by Theodoret, and delivered by Apollo Daphnes unto Julian, upon his Persian Expedition, that he should remove the bodies about him, before he could returne an answer, and not long after his Temple was burnt with Lightning.

All which were evident and convincing acknowledgements of that power which shut his lips, and restrained that delusion which had reigned so many Centuries. But as his malice is vigilant, and the sins of men do still continue a toleration of his mischiefes, he resteth not, nor will he ever cease to circumvent the sons of the first deceaved, and therefore expelled his Oracles and solemne Temples of delusion, he runnes into corners, exercising minor trumperies, and acting his deceits in Witches, Magicians, Diviners, and such inferiour seductions. And yet (what is deplorable) while we apply our selves thereto, and affirming that God hath left to speake by his Prophets, expect in doubtfull matters a resolution from such Spirits; while we say the Divell is mute, yet confesse that these can speake; while we deny the substance, yet practise the effect; and in the denyed solemnity maintaine the equivalent efficacy; in vaine we cry that Oracles are downe, Apolloe's alter yet doth smoake, nor is the fire of Delphos out unto this day.

Impertinent it is unto our intention to speake in generall of Oracles, and

and many have well performed it. The plaineſt of others was that recorded by Herodotus and delivered unto Cræſus; who as a tryall of hir omniſcience ſent unto diſtant Oracles, and ſo contrived with the meſſengers, that though in ſeverall places, yet at the ſame time they ſhould demand what Cræſus was then a doing. Among all others the Oracle of Delphos onely hit it, returning anſwer, hee was boyling a Lambe with a Tortoyſe, in a brazen veſſell with a cover of the ſame metall. The ſtile is haughty in Greeke, though ſomewhat lower in Latine—— *Æquoris eſt ſpatium & numerus mihi notus arenæ,*
Mutum percipio, fantis nihil audio vocem.
Venit ad hos ſenſus nidor teſtudinis acris,
Quæ ſemel agninâ coquitur cum carne lebete,
Ære infra ſtrato, & ſtratum cui deſuper æs eſt.

I know the ſpace of Sea, the number of the ſand,
I heare the ſilent, mute I underſtand.
A tender Lambe joyned with Tortoiſe fleſh,
Thy Maſter King of Lydia now doth dreſſe.
The ſent thereof doth in my noſtrills hover
From brazen pot cloſed with brazen cover. Hereby indeed he acquired much wealth and more honour, and was reputed by Cræſus as a Diety: and yet not long after, by a vulgar fallacie he deceived his favourite and greateſt friend to Oracles into an irreparable overthrow by Cyrus. And ſurely the ſame ſucceſſe are likely all to have that relie or depend upon him; 'twas the firſt play he practiſed on mortallity, and as time hath rendred him more perfect in the Art, ſo hath the inveterateneſſe of his malice more ready in the execution. 'Tis therefore the ſoveraigne degree of folly, and a crime not onely againſt God, but alſo our owne reaſons, to expect a favour from the Divell, whoſe mercies are more cruell then thoſe of Polyphemus; for hee devours his favourites firſt, and the nearer a man approacheth, the ſooner he is ſcorched by Moloch. In briefe, his favours are deceitfull and double headed, he doth apparent good, for reall and convincing evill after it, and exalteth us up to the top of the Temple, but to humble us downe from it.

Chap. XIII.

Of the death of Ariſtotle.

THat Ariſtotle drowned himſelfe in Euripus as deſpairing to reſolve the cauſe of its reciprocation, or ebbe and flow ſeven times a day; with this determination, *Si quidem ego non capio te tu capies me,*

was the assertion of Procopius, Nazianzen, Iustine Martyr, and is generally beleeved amongst us; wherein, because we perceive men have but an imperfect knowledge, some conceiving Euripus to be a River, others not knowing where or in what part to place it, wee first advertise, it generally signifieth any strait fret, or channell of the Sea, running betweene two shoares, as Julius Pollux hath defined it, as wee reade of Euripus Hellespontiacus, Pyrrhæus and this whereof we treat, Euripus Euboicus or Chalcidicus; that is, a narrow passage of Sea deviding Attica and the Island of Eubæa, now called *Golfo de Negroponte*, from the name of the Island and chiefe City thereof, famous in the warres of Antiochus, and was taken from the Venetians by Mahomet the great.

Now that in this Euripe or fret of Negropont, and upon the occasion mentioned, Aristotle drowned himselfe, as many affirme, and almost all beleeve, we have some roome to doubt. For without any mention of this, we finde two wayes delivered of his death by Diogenes Laertius, who expresly treateth thereof, the one from Eumolus and Phavorinus, that being accused of impiety for composing an Hymne unto Hermias, (upon whose Concubine he begat his sonne Nichomachus) he withdrew into Chalcis, where drinking poyson he dyed: the Hymne is extant in Laertius, and the fifteenth booke of Athenæus. Another by Apollodorus, that he dyed at Chalcis of a naturall death and languishment of stomack, in his sixty three, or great Climacterical yeare; and answerable hereto is the account of Suidas and Censorinus.

Againe, beside the negative of Authority, it is also deniable by reason, nor will it be easie to obtrude such desperate attempts unto Aristotle, upon a non ability or unsatisfaction of reason, who so often acknowledged the imbecility thereof; who in matters of difficulty, and such which were not without abstrusities, conceived it sufficient to deliver conjecturalities; and surely he that could sometimes sit downe with high improbabilities, that could content himselfe, and thinke to satisfie others, that the variegation of Birds was from their living in the Sunne, or erection made by deliberation of the Testicles, would not have beene dejected unto death with this; He that was so well acquainted with ἢ ὅτι, and πότερον, *utrum*, and *An Quia*, as we observe in the Queries of his Problemes; with ἴσως and ὅτι τὸ πολὺ, *fortasse* and *plerumq;*, as is observable through all his Workes; had certainely rested with probabilities, and glancing conjectures in this: Nor would his resolutions have ever runne into that mortall Antanaclasis, and desperate piece of Rhetorick, to be compriz'd in that he could not comprehend. Nor is it indeed to bee made out he ever endeavoured the particular of Euripus, or so much as to resolve the ebbe and flow of the Sea. For, as Vicomercatus and others observe, he hath made no mention hereof in his Workes, although the occasion present it selfe in his Meteors;

Meteors; wherein hee disputeth the affections of the Sea: nor yet in his Problemes, although in the twenty third Section, there be no lesse then one and forty Queries of the Sea; some mention there is indeed in a Worke of the propriety of Elements, ascribed unto Aristotle, which notwithstanding is not reputed genuine, and was perhaps the same whence this was urged by Plutarch, *De placitis Philosophorum.*

Lastly, the thing it selfe whereon the opinion dependeth, that is, the variety of the flux and reflux of Euripus, or whether the same doe ebbe and flow seven times a day, is not incontrovertible; and for my own part, I remaine unsatisfied therein. For, though Pomponius Mela, and after him Solinus, and Pliny have affirmed it, yet I observe Thucydides, who speaketh often of Eubæa, hath omitted it. Pausanias an ancient Writer, who hath left an exact description of Greece, and in as particular a way as Leandro of Italy, or Cambden of Great Britaine, describing not only the Country Townes, and Rivers, but hils, springs, and houses, hath left no mention hereof. Æschines in Ctesiphon onely alludeth unto it; and Strabo, that accurate Geographer speakes warily of it, that is, ὡς φασὶ, and as men commonly reported. And so doth also Maginus, *Velocis ac varii fluctus est mare, ubi quater in die, aut septies, ut alii dicunt, reciprocantur æstus.* Botero more plainely, *Il mar cresce e cala con un impeto mirabile quatro volte il dì, ben che communimente se dica sette volte, &c.* This Sea with wondrous impetuosity ebbeth and floweth foure times a day, although it be commonly said seven times, and generally opinion'd, that Aristotle despairing the reason, drowned himselfe therein. In which description by foure times a day, it exceeds not in number the motion of other Seas, taking the words properly, that is, twice ebbing and twice flowing in foure and twenty howres; and is no more then what *Thomaso Porrcacchi* affirmeth, in his description of famous Islands, that twice a day it hath such an impetuous floud, as is not without wonder. Livy speakes more particularly, *Haud facile infestior classi statio est & fretum ipsum Euripi, non septies die, (sicut fama fert) temporibus certis reciprocat, sed temere in modum venti, nunc huc nunc illuc verso mari, velut monte præcipiti devolutus torrens rapitur.* There is hardly a worse harbour, the fret or channell of Euripus not certainely ebbing or flowing seven times a day, according to common report, but being uncertainely, and in the manner of a winde carried hither and thither, is whirled away as a torrent downe a hill. But the experimentall testimony of Gillius is most considerable of any, who having beheld the course thereof, and made enquiry of Millers that dwelt upon its shoare, received answer, that it ebbed and flowed foure times a day, that is, every sixe howres, according to the Law of the Ocean; but that indeed sometimes it observed not that certaine course. And this irregularity though seldome happening, together with

with its unruly and tumultuous motion might afford a beginning unto the common opinion; thus may the expreſſion in Cteſiphon be made out; and by this may Ariſtotle be interpreted, when in his Problemes he ſeemes to borrow a Metaphor from Euripus; while in the five and twentieth Section he enquireth, why in the upper parts of houſes the ayre doth Euripize, that is, is whirled hither and thither.

Now the ground, or that which gave life unto the aſſertion, might be his death at Chalcis, the chiefe City of Eubæa, and ſeated upon Euripus, where tis confeſſed by all he ended his dayes. That he emaciated and pined away in the too anxious enquirie of its reciprocations, although not drowned therein, as Rhodiginus relateth ſome conceived, was a halfe confeſſion thereof not juſtifiable from Antiquity. Surely the Philoſophy of flux and reflux was very imperfect of old among the Greeks and Latins; nor could they hold a ſufficient theory thereof, who onely obſerveth the Mediterranean, which in ſome places hath no ebbe, and not much in any part. Nor can we affirme our knowledge is at the height, who have now the Theory of the Ocean and narrow Seas beſide. While we referre it unto the Moone, we give ſome ſatisfaction for the Ocean, but no generall ſalve for Creeks, and Seas which know no floud; nor reſolve why it flowes three or foure foot at Venice in the bottome of the Golfe, yet ſcarce at all at Ancona Durazzo, or Corcyra, which lye but by the way. And therefore old abſtruſities have cauſed new inventions; and ſome from the Hypotheſes of Copernicus or the Diurnall and annuall motion of the earth, endeavour to ſalve the flowes and motions of theſe ſeas, illuſtrating the ſame by water in a boale, that riſing or falling to either ſide, according to the motion of the veſſell; the conceit is ingenuous, ſalves ſome doubts, and is diſcovered at large by Galilæo in his Syſteme of the world.

However therefore Ariſtotle died, what was his end, or upon what occaſion, although it be not altogether aſſured, yet that his memory and worthy name ſhall live, no man will deny, nor gratefull ſchollar doubt: and if according to the Elogie of Solon, a man may be onely ſaid to be happy after he is dead, and ceaſeth to be in the viſible capacity of beatitude: or if according unto his owne Ethicks, ſence is not eſſentiall unto felicity, but a man may be happy without the apprehenſion thereof; ſurely in that ſence he is pyramidally happy, nor can he ever periſh but in the Euripe of Ignorance, or till the Torrent of Barbariſme overwhelme all.

A like conceit there paſſeth of Meleſigenes, *alias* Homer, the father Poet, that he pined away upon the Riddle of the fiſhermen. But Herodotus who wrote his life hath cleared this point; delivering that paſſing from Samos unto Athens, he went ſicke aſhore upon the Iſland Jos, where he dyed, and was ſolemnly enterred upon the Sea ſide; and ſo decidingly concludeth, *Ex hac ægritudine extremum diem, clauſit*

sit Homerus in Io, non, ut arbitrantur aliqui, Ænigmatis perplexitate enectus, sed morbo.

Chap. XIV.

Of the Wish of Philoxenus.

THat Relation of Aristotle and conceit generally received concerning Philoxenus, who wished the neck of a Crane, that thereby he might take more pleasure in his meat, although it pass without exception, upon enquiry I finde not onely doubtfull in the story, but absurd in the desire or reason alledged for it. For though his Wish were such as is delivered, yet had it not perhaps that end to delight his gust in eating, but rather to obtaine advantage thereby in singing, as is declared by Mirandula. Aristotle (saith he) in his Ethicks and Problemes, accuseth Philoxenus of sensuality, for the greater pleasure of gust in desiring the neck of a Crane; which desire of his, assenting unto Aristotle, I have formerly condemned; But since I perceive that Aristotle for this accusation hath beene accused by divers Writers; for Philoxenus was an excellent Musician, and desired the neck of a Crane, not for any pleasure at meate, but fancying thereby an advantage in singing or warbling, and deviding the notes in musick. And indeed, many Writers there are which mention a Musician of that name, as Plutarch in his booke against Usury, and Aristotle himselfe in the eight of his Politicks, speakes of one Philoxenus a Musician, that went off from the Dorick Dytherambicks unto the Phrygian Harmony.

Againe, be the story true or false, rightly applied or not, the intention is not reasonable, and that perhaps neither one way nor the other. For, if we rightly consider the organ of taste, we shall finde the length of the neck to conduce but little unto it. For the tongue being the instrument of taste, and the tip thereof the most exact distinguisher, it will not advantage the gust to have the neck extended, wherein the Gullet and conveying parts are onely seated, which partake not of the nerves of gustation or appertaining unto sapor, but receive them onely from the sixth payre; whereas the nerves of taste descend from the third and forth propagations, and so diffuse themselves into the tongue. And therefore Cranes, Hernes, and Swans, have no advantage in taste beyond Hawkes, Kites, and others of shorter necks.

Nor, if we consider it, had Nature respect unto the taste in the different contrivance of necks, but rather unto the parts contained, the composure of the rest of the body, and the manner whereby they feed. Thus animals of long legs, have generally long necks; that is, for the conveniency of feeding, as having a necessity to apply their mouths unto

unto the earth. So have Horſes, Camels, Dromedaries long necks, and all tall animals, except the Elephant, who in defect thereof is furniſhed with a Trunck, without which he could not attaine the ground. So have Cranes, Hernes, Storks, and Shovelards long necks; and ſo even in Man whoſe figure is erect, the length of the neck followeth the proportion of other parts; and ſuch as have round faces, or broad cheſts and ſhoulders, have ſeldome or never long necks. For, the length of the face twice exceedeth that of the neck, and the ſpace betwixt the throat pit and the navell is equall unto the circumference thereof. Againe, animals are framed with long necks, according unto the courſe of their life or feeding: ſo many with ſhort legs have long necks, becauſe they feed in the water, as Swans, Geeſe, Pellicans, and other finfooted animals. But Hawkes and birds of prey have ſhort necks and truſſed legs; for that which is long is weake and flexible, and a ſhorter figure is beſt accommodated unto that intention. Laſtly, the necks of animals doe vary, according to the parts that are contained in them, which are the weazon and the gullet. Such as have no weazon and breathe not, have ſcarce any neck, as moſt ſorts of fiſhes, and ſome none at all, as all ſorts of pectinals, Soales, Thornback, Flounders; and all cruſtaceous animals, as Creviſes, Crabs, and Lobſters.

All which conſidered, the Wiſh of Philoxenus will hardly conſiſt with reaſon. More excuſable had it beene to have wiſhed himſelfe an Ape, which if common conceit ſpeake true, is exacter in taſte then any. Rather ſome kinde of granivorous bird then a Crane, for in this ſenſe they are ſo exquiſite, that upon the firſt peck of their bill, they can diſtinguiſh the qualities of hard bodies, which the ſence of man diſcernes not without maſtication. Rather ſome ruminating animall, that he might have eate his meate twice over; or rather, as Theophilus obſerved in Athenæus, his deſire had beene more reaſonable, had hee wiſhed himſelfe an Elephant, or an Horſe; for in theſe animals the appetite is more vehement, and they receive their viands in large and plenteous manner. And this indeed had beene more ſutable, if this were the ſame Philoxenus whereof Plutarch ſpeaketh, who was ſo uncivilly greedy, that to engroſſe the meſſe, he would preventively deliver his noſtrils in the diſh.

As for the muſicall advantage, although it ſeeme more reaſonable, yet doe we not obſerve that Cranes and birds of long necks have any muſicall, but harſh and clangous throats. But birds that are canorous and whoſe notes we moſt commend, are of little throats, and ſhort necks, as Nightingales, Finches, Linnets, Canary birds and Larkes. And truly, although the weazon, throtle and tongue be the inſtruments of voice, and by their agitations doe chiefly concurre unto theſe delightfull modulations, yet cannot we aſſigne the cauſe unto any particular formation; and I perceive the beſt thereof, the Nightingale hath

ſome

ſome diſadvantage in the tongue; which is not acuminate and pointed as in the reſt, but ſeemeth as it were cut off; which perhaps might give the hint unto the fable of Philomela, and the cutting off her tongue by Tereus.

Chap. XV.
Of the Lake Aſphaltites.

Concerning the Lake Aſphaltites, the Lake of Sodome, or the dead Sea, that heavy bodies caſt therein ſinke not, but by reaſon of a ſalt and bituminous thickneſſe in the water floate and ſwimme above, narrations already made are of that variety, we can hardly from thence deduce a ſatisfactory determination, and that not onely in the ſtory it ſelfe, but in the cauſe alledged. For, as for the ſtory men deliver it variouſly; ſome I feare too largely, as Pliny, who affirmeth that bricks will ſwim therein. Mandevill goeth farther, that Iron ſwimmeth, and feathers ſinke. Munſter in his Coſmography hath another relation, although perhaps derived from the Poem of Tertullian, that a candle burning ſwimmeth, but if extinguiſhed ſinketh. Some more moderately, as Joſephus, and many other; affirming onely that living bodies floate, nor peremptory averring they cannot ſinke, but that indeed they doe not eaſily deſcend. Moſt traditionally, as Galen, Pliny, Solinus and Strabo, who ſeemes to miſtake the Lake Serbonis for it; few experimentally, moſt contenting themſelves in the experiment of Veſpaſian, by whoſe command ſome captives bound were caſt therein and found to floate as though they could have ſwimmed: divers contradictorily, or contrarily, quite overthrowing the point. Ariſtotle in the ſecond of his Meteors ſpeaks lightly thereof, ὥσπερ μυθολογοῦσι, and eſteemeth thereof as a fable. Biddulphus devideth the common accounts of Judea into three parts, the one ſaith he are apparent truths, the ſecond apparent falſhoods, the third are dubious or betweene both, in which forme hee ranketh the relation of this Lake. But Andrew Thevet in his Coſmography doth ocularly overthrow it; for hee affirmeth, he ſaw an Aſſe with his ſaddle caſt therein, and drowned. Now of theſe relations ſo different or contrary unto each other, the ſecond is moſt moderate, and ſafeſt to be embraced, which ſaith, that living bodies ſwim therein, that is, they doe not eaſily ſinke: and this, untill exact experiment further determine, may be allowed, as beſt conſiſtent with this quality, and the reaſons alledged for it.

As for the cauſe of this effect, common opinion conceives it to bee the ſalt and bituminous thickneſſe of the water. This indeed is probable, and may bee admitted as farre as the ſecond opinion conceadeth. For, certaine it is that ſalt water will ſupport a greater burden then freſh, and we daylie ſee an egge will deſcend in ſalt water, which

will ſwimme in brine. But that Iron ſhould floate therein, from this cauſe is hardly granted; for heavy bodies will onely ſwim in that liquor, wherein the weight of their bulke exceedeth not the weight of ſo much water as it occupieth or taketh up. But ſurely no water is heavy enough to anſwer the ponderoſity of Iron; and therefore that metall will ſinke in any kinde thereof, and it was a perfect miracle which was wrought this way by Eliſha. Thus wee perceive that bodies doe ſwim or ſinke in different liquors, according unto the tenuity or gravity of thoſe liquors which are to ſupport them. So ſalt water beareth that weight which will ſinke in vineger, vineger that which will fall in freſh water, freſh water that which will ſinke in ſpirits of Wine, and that will ſwimme in ſpirits of Wine which will ſinke in cleere oyle, as wee made experiment in globes of waxe pierced with light ſticks to ſupport them. So that although it be conceived an hard matter to ſinke in oyle, I beleeve a man ſhould finde it very difficult, and next to flying to ſwimme therein. And thus will Gold ſwim in Quickſilver, wherein Iron and other metals ſinke; for the bulke of Gold is onely heavier then that ſpace of Quickſilver which it containeth; and thus alſo in a ſolution of one ounce of Quickſilver in two of *Aqua fortis*, the liquor will beare Amber, horne and the ſofter kinds of ſtones, as we have made triall in each.

But a private opinion there is which croſſeth the common conceit, maintained by ſome of late, and alledged of old by Strabo, that is, that the floating of bodies in this Lake proceeds not from the thickneſſe of the water, but a bituminous ebullition from the bottome, whereby it wafts up bodies injected, and ſuffereth them not eaſily to ſinke. The verity thereof would be enquired by ocular exploration, for this way is alſo probable; ſo we obſerve, it is hard to wade deep in baths where ſprings ariſe, and thus ſometime are bals made to play upon a ſpouting ſtreame.

And therefore, untill judicious and ocular experiment confirme or diſtinguiſh the aſſertion, that bodies doe not ſinke herein at all we doe not yet beleeve; that they not eaſily or with more difficulty deſcend in this then other water we ſhall already aſſent: but to conclude an impoſſibility from a difficulty, or affirme whereas things not eaſily ſinke, they doe not drowne at all; beſide the fallacy, is a frequent addition in humane expreſſion, and an amplification not unuſuall as well in opinions as in relations; which oftentimes give indiſtinct accounts of proximities, and without reſtraint tranſcend from one unto another. Thus for as much as the torrid Zone was conceived exceeding hot, and of difficult habitation, the opinions of men ſo advanced its conſtitution, as to conceive the ſame unhabitable, and beyond poſſibility for man to live therein. Thus, becauſe there are no Wolves in England, nor have beene obſerved for divers generations, common people have

proceeded

proceeded into opinions, and some wise men into affirmations, they will not live therein although brought from other Countries. Thus most men affirme, and few here will beleeve the contrary, that there be no Spiders in Ireland; but wee have beheld some in that Country, and though but few, some cobwebs we behold in Irish wood in England. Thus the Crocodile from an egge growing up to an exceeding magnitude, common conceit, and divers Writers deliver, it hath no period of encrease, but groweth as long as it liveth. And thus in briefe, in most apprehensions the conceits of men extend the considerations of things, & dilate their notions beyond the propriety of their natures.

Chap. XVI.
Of divers other relations.

1. THe relation of Averroes and now common in every mouth, of the woman that conceived in a bath, by attracting the sperme or seminall effluxion of a man admitted to bathe in some vicinity unto her, I have scarce faith to beleeve; and had I beene of the Jury, should have hardly thought I had found the father in the person that stood by her. Tis a new & unseconded way in History to fornicate at a distance, & much offendeth the rules of Physick, which say, there is no generation without a joynt emission, nor onely a virtuall but corporall and carnall contaction. And although Aristotle and his adherents doe cut off the one, who conceive no effectuall ejaculation in women, yet in defence of the other they cannot be introduced: For, as he delivereth, the inordinate longitude of the organ, though in its proper recipient, may be a meanes to improlificate the seed, surely the distance of place, with the commixture of an aqueous body, must prove an effectuall impediment, & utterly prevent the successe of a conception. And therfore that conceit concerning the daughters of Lot, that they were impregnated by their sleeping father, or conceived by seminal pollution received at distance from him, wil hardly be admitted. And therfore what is related of Divels, and the contrived delusions of wicked spirits, that they steale the seminall emissions of man, and transmit them into their votaries in coition, is much to be suspected, & altogether to be denyed, that there ensue conceptions thereupon, however husbanded by Art, and the wisest menagery of that most subtile impostor. And therefore also that our magnified Merlin was thus begotten by the Devill, is a groundlesse cõception, & as vain to think from thence to give the reason of his prophetical spirit. For if a generation could succeed, yet should not the issue inherit the faculties of the Devill, who is but an auxiliary & no univocal Actor, nor will his nature substantially concurre to such productions.

2. The relation of Lucillius, and now become common, concerning Crassus the grandfather of Marcus the wealthy Roman, that hee never laughed but once in all his life, and that was at an Asse eating

Thiſtles, is ſomething ſtrange. For, if an indifferent and unridiculous object could draw his habituall auſtereneſſe unto a ſmile, it will bee hard to beleeve hee could with perpetuity reſiſt the proper motives thereof: for the act of laughter which is a ſweet contraction of the muſcles of the face, and a pleaſant agitation of the vocall organs, is not meerely voluntary, or totally within the juriſdiction of our ſelves: but as it may be conſtrained by corporall contaction in any, and hath beene enforced in ſome even in their death; ſo the new unuſuall or unexpected jucundities, which preſent themſelves to any man in his life, at ſome time or other will have activity enough to excitate the earthieſt ſoule, and raiſe a ſmile from moſt compoſed tempers. Certainely the times were dull when theſe things happened, and the wits of thoſe Ages ſhort of theſe of ours, when men could maintaine ſuch immutable faces, as to remaine like ſtatues under the flatteries of wit, and perſiſt unalterable at all effortes of Jocularity. The ſpirits in hell, and Pluto himſelfe, which Lucian makes to laugh at paſſages upon earth, will plainely condemne theſe Saturnines, and make ridiculous the magnified Heraclitus, who wept prepoſterouſly, and made a hell on earth; for rejecting the conſolations of life, he paſſed his dayes in teares, and the uncomfortable attendments of hell.

3. The ſame conceit there paſſeth concerning our bleſſed Saviour, and is ſometimes urged as an high example of gravity. And this is opinioned, becauſe in holy Scripture it is recorded he ſometimes wept, but never that he laughed. Which howſoever granted, it will be hard to conceive how he paſſed his younger yeares and childhood without a ſmile; if as Divinity affirmeth, for the aſſurance of his humanity unto men, and the concealement of his Divinity from the Divell, he paſſed this age like other children, and ſo proceeded untill he evidenced the ſame. And ſurely no danger there is to affirme the act or performance of that, whereof we acknowledge the power and eſſentiall property; and whereby indeed hee moſt neerely convinced the doubt of his humanity. Nor need we be afraid to aſcribe that unto the incarnate Son, which ſometimes is attributed unto the uncarnate Father, of whom it is ſaid, He that dwelleth in the heavens ſhall laugh the wicked to ſcorn. For, a laugh there is of contempt or indignation, as well as of mirth and Jocoſity; And that our Saviour was not exempted from, the ground hereof, that is, the paſſion of anger, regulated and rightly ordered by reaſon, the Schooles do not deny: and beſides the experience of the money-changers, and Dove-ſellers in the Temple, is teſtified by S. John when he ſaith, the ſpeech of David was fulfilled in our Saviour.

Zelus domus tuæ comedit me.

Now the Alogie of this opinion conſiſteth in the illation; it being not reaſonable to conclude from Scripture negatively in points which are not matters of faith, and pertaining unto ſalvation; and therefore although

though in the deſcription of the creation there be no mention of fire, Chriſtian Philoſophy did not thinke it reaſonable preſently to annihilate that Element, or poſitively to decree there was no ſuch thing at all. Thus whereas in the briefe narration of Moſes there is no record of wine before the flood, can we ſatisfactorily conclude that Noah was the firſt that ever taſted thereof? And thus becauſe the word Braine is ſcarce mentioned once, but Heart above an hundred times in holy Scripture; will Phyſitians that diſpute the principality of parts be induced from hence to bereave the animall organ of its priority; wherefore the Scriptures being ſerious, and commonly omitting ſuch Parergies, it will be unreaſonable from hence to condemne all laughter, and from conſiderations inconſiderable to diſcipline a man out of his nature; for this is by a ruſticall ſeverity to baniſh all urbanity, whoſe harmeleſſe and confined condition as it ſtands commended by morality, ſo is it conſiſtent with Religion, and doth not offend Divinity.

Only in the vulgar Latine Judg. 9. 53.

4. The cuſtome it is of Popes to change their name at their creation; and the Author thereof is commonly ſaid to be *Bocca di Porco*, or Swines face, who therefore aſſumed the ſtile of Sergius the ſecond, as being aſhamed ſo foule a name ſhould diſhonour the chaire of Peter; wherein notwithſtanding from Montacutius and others, I finde there may bee ſome miſtake: For Maſſonius who writ the lives of Popes, acknowledgeth he was not the firſt that changed his name in that Sea; nor as Platina affirmeth, have all his ſucceſſours preciſely continued that cuſtome; for Adrian the ſixt, and Marcellus the ſecond, did ſtill retaine their Baptiſmall denominations, nor is it proved, or probable that Sergius changed the name of *Bocca di Porco*, for this was his ſirname or gentilitious appellation, nor was it the cuſtome to alter that with the other; but he commuted his Chriſtian name Peter for Sergius, becauſe he would ſeem to decline the name of Peter the ſecond. A ſcruple I confeſſe not thought conſiderable in other Seas, whoſe originalls and firſt Patriarchs have been leſſe diſputed; nor yet perhaps of that reality as to prevaile in points of the ſame nature. For the names of the Apoſtles, Patriarchs and Prophets have been aſſumed even to affectation; the name of Jeſus hath not been appropriate, but ſome in precedent ages have borne that name, and many ſince have not refuſed the Chriſtian name of Emanuel. Thus are there few names more frequent then Moſes and Abraham among the Jewes; The Turkes without ſcruple affect the name of Mahomet, and with gladneſſe receive ſo honourable cognomination.

And truly in humane occurrences there ever have beene many well directed intentions, whoſe rationalities will never beare a rigid examination; and though in ſome way they doe commend their Authors and ſuch as firſt began them, yet have they proved inſufficient to perpetuate imitation in ſuch as have ſucceeded them. Thus was it a worthy

thy resolution of Godfrey, and most Christians have applauded it, That hee refused to weare a Crowne of gold where his Saviour had worne one of thornes. Yet did not his Successors durably inherit that scruple, but some were anointed, and solemnely accepted the Diademe of Regality. Thus Julius Augustus and Tiberius with great humility or popularity refused the name of *Imperator*; but their Successors have challenged that title, and retaine the same even in its titularity. And thus, to come neerer our subject, the humility of Gregory the Great, would by no meanes admit the stile of Universall Bishop; but the ambition of Boniface his immediate Successor made no scruple thereof; nor of more queasie resolutions have beene their Successors ever since.

5. That Tamerlane was a Scythian Shepheard, from Mr. Knolls and others, from Alhazen a learned Arabian who wrote his life, and was spectator of many of his exploits, wee have reasons to deny: not onely from his birth; for he was of the blood of the Tartarian Emperours, whose father Og had for his possession the Countrey of Sagathay, which was no slender Teritory, but comprehended all that tract wherein were contained Bactriana, Sogdiana, Margiana, and the Nation of the Massagetes; whose capitall City was Samarcand; a place though now decayed, of great esteeme and trade in former Ages: but from his Regall Inauguration; for it is said, that being about the age of fifteene, his old father resigned the Kingdome, and men of warre unto him. And also from his education; for as the story speakes it, he was instructed in the Arabian learning, and afterward exercised himselfe therein: Now Arabian learning was in a manner all the liberall Sciences, especially the Mathematicks, and naturall Philosophy; wherein not many Ages before him, there flourished Avicenna, Averrhoes, Avenzoar, Geber, Almanzor and Alhazen cognominall unto him that wrote his history; whose Chronology indeed, although it be obscure, yet in the opinion of his Commentator, he was contemporary unto Avicenna, and hath left sixteene bookes of Opticks, of great esteeme with Ages past, and textuary unto our dayes.

Now the ground of this mistake was surely that which the Turkish historian declareth. Some, saith he, of our historians will needs have Tamerlane to be sonne of a Shepheard; but this they have said, not knowing at all the custome of their Country; wherein the principall revenewes of the King and Nobles consisteth in cattell; who despising gold and silver, abound in all sorts thereof. And this was the occasion that some men call them Shepheards, and also affirme this Prince descended from them. Now, if it be reasonable, that great men whose possessions are chiefly in cattell, should beare the name of Shepheards, and fall upon so low denominations, then may wee say

say that Abraham was a Shepheard, although too powerfull for foure Kings; that Job was of that condition, who beside Camels and Oxen had seven thousand Sheepe; and yet is said to bee the greatest man in the East. Surely it is no dishonourable course of life which Moses and Jacob have made exemplary, 'tis a profession supported upon the naturall way of acquisition, and though contemned by the Ægyptians, much countenanced by the Hebrewes, whose sacrifices required plenty of Sheepe and Lambs. And certainely they were very numerous; for, at the consecration of the Temple, beside two and twenty thousand Oxen, King Solomon sacrificed an hundred and twenty thousand Sheepe; and the same is observable from the daylie provision of his house, which was ten fat Oxen, twenty Oxen out of the pastures, and an hundred Sheepe, beside rowe Buck, fallow Deere, and fatted Fowles. Wherein notwithstanding (if a punctuall relation thereof doe rightly informe us) the grand Seignor doth exceed: the daylie provision of whose Seraiglio in the reigne of Achmet, beside Beeves, consumed two hundred Sheepe, Lambs and Kids when they were in season one hundred, Calves ten, Geese fifty, Hens two hundred, Chickens one hundred, Pigeons an hundred payre.

Chap. XVII.

Of some others.

1. WEE are sad when wee reade the story of Belisarius that worthy Cheiftaine of Justinian; who, after the Victories of Vandals, Gothes and Persians, and his Trophies in three parts of the World, had at last his eyes put out by the Emperour, and was reduced to that distresse, that hee beg'd relieve on the high way, in that uncomfortable petition, *Date obolum Belisario.* And this we do not only heare in discourses, Orations and Themes, but finde it also in the leaves of *Petrus Crinitus, Volateranus* and other worthy Writers.

But, what may somewhat consolate all men that honour vertue, wee doe not discover the latter Scene of his misery in Authors of Antiquity, or such as have expressly delivered the story of those times. For, Suidas is silent herein, Cedrenus and Zonaras, two grave and punctuall Authors, delivering onely the confiscation of his goods, omit the history of his mendication. *Paulus Diaconus* goeth farther, not onely passing over this

this act, but affirming his goods and dignities were restored. Agathius who lived at the same time, declareth hee suffered much from the envie of the Court, but that hee descended thus deepe into affliction, is not to bee gathered from his pen. The same is also omitted by *Procopius* a contemporary and professed enemy unto Justinian and Belisarius, and who as Suidas reporteth, did write an opprobrious booke against them both.

And in this opinion and hopes wee are not single; but Andreas Alciatus the Civilian in his Parerga, and *Franciscus de Cordua* in his *Didascalia*, have both declaratorily confirmed the same. Certainely, sad and Tragicall stories are seldome drawne within the circle of their verities; but as their Relators doe either intend the hatred or pitty of the persons, so are they set forth with additionall amplifications. Thus have some suspected it hath happened unto the story of Oedipus; and thus doe wee conceive it hath fared with that of Judas, who having sinned beyond aggravation, and committed one villany which cannot bee exasperated by all other; is yet charged with the murther of his reputed brother, parricide of his father, and Incest with his owne mother, as Florilegus or Matthew of Westminster hath at large related. And thus hath it perhaps befallen the noble Belisarius, who, upon instigation of the Empresse, having contrived the exile, and very hardly treated Pope Serverius, Latin pens, as a judgement of God upon this fact, have set forth his future sufferings: and omitting nothing of amplification, they have also delivered this, which notwithstanding *Iohannes* the Greeke, makes doubtfull, as may appeare from his Iambicks in Baronius.

2. That *fluctus Decumanus*, or the tenth wave is greater and more dangerous then any other, some no doubt will be offended if we deny; and hereby we shall seeme to contradict Antiquity; for, answerable unto the literall and common acception the same is averred by many Writers, and plainly described by Ovid——

Qui venit hic fluctus, fluctus supereminet omnes,
Posterior nono est, undecimoq; prior.

Which notwithstanding is evidently false, nor can it bee made out by observation either upon the shoare or the Ocean, as wee have with diligence explored in both; and surely in vaine wee expect a regularity in the waves of the Sea, or in the particular motions thereof, as in its generall reciprocations, whose causes are constant and their effects therefore correspondent; whereas its

its fluctuations are but motions subservient, which winds, stormes, shoares, shelves, and every interjacency irregulates. With semblable reason wee might expect a regularity in the windes; whereof though some bee statary, some anniversary, and the rest doe tend to determinate points of heaven; yet do the blasts and undulary breaths thereof maintaine no certainty in their course; not are they numerally feared by Navigators.

Of affinity hereto is that conceit of *Ovum decumanum*, so called, because the tenth egge is bigger then any other; according unto the reason alledged by Festus, *Decumana ova dicuntur, quia ovum decimum majus nascitur.* For the honour wee beare unto the Clergy, wee cannot but wish this true; but herein will bee found no more of verity then in the other: and surely few will assent hereto without an implicite credulity, or as Pythagoricall submission unto every conception of number.

For, surely the conceit is numerall, and though not in the sence apprehended, relateth unto the number of ten, as *Franciscus Sylvius* hath most probably declared. For, whereas amongst simple numbers or Digits, the number of ten is the greatest, therefore whatsoever was the greatest in every kinde, might in some sence be named from this number. Now, because also that which was the greatest, was metaphorically by some at first called *Decumanus*, therefore whatsoever passed under this name was literally conceived by others to respect and make good this number.

The conceit is also Latin, for the Greeks to expresse the greatest wave, do use the number of three, that is, the word τρικυμία, which is a concurrence of three waves in one, whence arose the proverb, τρικυμία κακῶν, or a trifluctuation of evils, which Erasmus doth render, *Malarum fluctus Decumanus.* And thus, although the termes be very different, yet are they made to signifie the selfe same thing; the number of ten to explaine the number of three, and the single number of one wave the collective concurrence of more.

3. The poyson of Parysatis reported from Ctesias by Plutarch in the life of Artaxerxes, whereby annointing a knife on the one side, and therewith dividing a bird, with the one halfe shee poysoned Statira, and safely fed her selfe on the other, was certainely a very subtile one, and such as our ignorance is well content it knowes not. But surely we had discovered a poyson that would not endure Pandoraes Box, could wee be satisfied in that which for its coldnesse nothing could containe but an Asses hoofe, and wherewith some report that Alexander the Great was poysoned. Had men derived so strange an effect from some occult or hidden qualities, they might have silenced contradiction; but ascribing it unto the

manifeſt and open qualities of cold, they muſt pardon our beliefe, who perceive the coldeſt and moſt Stygian waters may be included in glaſſes, and by Ariſtotle, who ſaith, that glaſſe is the perfecteſt worke of Art, wee underſtand they were not then to bee invented.

And though it be ſaid that poyſon will breake a Venice glaſſe, yet have wee not met with any of that nature. Were there a truth herein, it were the beſt preſervative for Princes, and perſonages exalted unto ſuch feares: and ſurely farre better then diverſe now in uſe. And though the beſt of China diſhes, and ſuch as the Emperour himſelfe doth uſe, bee thought by ſome of infallible vertue unto this effect, yet will they not, I feare, bee able to elude the miſchiefe of ſuch intentions. And though alſo it bee true, that God made all things double, and that if wee looke upon the workes of the moſt High there are two and two, one againſt another; that one contrary hath another, and poyſon is not without a poyſon unto its ſelfe; yet hath the curſe ſo farre prevailed, or elſe our induſtry defected, that poyſons are better knowne then their Antidotes, and ſome thereof doe ſcarce admit of any. And laſtly, although unto every poyſon men have delivered many Antidotes, and in every one is promiſed an equality unto its adverſary; yet doe wee often finde they faile in their effects: Moly will not reſiſt a weaker cup then that of Circe; a man may bee poyſoned in a Lemnian diſh, without the miracle of John, there is no confidence in the earth of Paul; and if it bee meant that no poyſon could worke upon him, we doubt the ſtory, and expect no ſuch ſucceſſe from the dyet of Mithridates.

Terra Melitea.

4. A ſtory there paſſeth of an Indian King, that ſent unto Alexander a faire woman fed with Aconites and other poyſons, with this intent, either by converſe or copulation complexionally to deſtroy him. For my part, although the deſigne were true, I ſhould have doubted the ſucceſſe. For, though it be poſſible that poyſons may meet with tempers whereto they may become Aliments, and wee obſerve from fowles that feed on fiſhes, and others feed with garlick and onyons, that ſimple aliments are not alwayes concocted beyond their vegetable qualities; and therefore that even after carnall converſion, poyſons may yet retaine ſome portion of their natures; yet are they ſo refracted, cicurated, and ſubdued, as not to make good their firſt and deſtructive malignities. And therefore the Storke that eateth Snakes, and the Stare that feedeth upon Hemlock, though no commendable aliments, are not deſtructive poyſons. For, animals that can innoxiouſly digeſt theſe poiſons become

antidotall

antidotall unto the poyſon digeſted; and therefore whether their breath be attracted, or their fleſh ingeſted, the poyſonous reliques goe ſtill along with their Antidote, whoſe ſociety will not permit their malice to be deſtructive. And therefore alſo animals that are not miſchifed by poyſons which deſtroy us, may bee drawne into Antidote againſt them; The bloud or fleſh of Storks againſt the venome of Serpents, the Quaile againſt Hellebore, and the dyet of Starlings againſt the draught of Socrates. Upon like grounds are ſome parts of Animals Alexipharmacall unto others, and ſome veines of the earth, and alſo whole regions, not onely deſtroy the life of venemous creatures, but alſo prevent their productions. For, though perhaps they containe the ſeminals of Spiders, and Scorpions, and ſuch as in other earths by ſuſcitation of the Sun may ariſe unto animation; yet lying under command of their Antidote, without hope of emergency they are poyſoned in their matrix by thoſe powers, that eaſily hinder the advance of their originals, whoſe confirmed formes they are able to deſtroy.

5. The ſtory of the wandring Jew is very ſtrange, and will hardly obtaine beliefe, yet is there a formall account thereof ſet downe by Matthew Paris, from the report of an Armenian Biſhop; who came into this kingdome about foure hundred yeares agoe, and had often entertained this wanderer at his Table. That he was then alive, was firſt called Cartaphilus, was keeper of the Judgement Hall, whence thruſting out our Saviour with expoſtulation for his ſtay, was condemned to ſtay untill his returne; was after baptiſed by Ananias, and by the name of Joſeph; was thirty yeares old in the dayes of our Saviour, remembred the Saints that ariſed with him, the making of the Apoſtles Creed, and their ſeverall peregrinations. Surely were this true, he might be an happy arbitrator in many Chriſtian controverſies; but muſt impardonably condemne the obſtinacy of the Jews, who can contemne the Rhetorick of ſuch miracles, and blindly behold ſo living and laſting converſions.

Vade quid moraris? Ego vado, tu antẽ morare donec venio.

Chap. XVIII.

More briefly of some others.

OTher relations there are, and those in very good Authors; which though we doe not positively deny, yet have they not beene unquestioned by some, and as improbable truths doe stand rejected by others. Unto some it hath seemed incredulous what Herodotus reporteth of the great Army of Xerxes, that dranke whole Rivers dry. And unto the Author himselfe it appeared wondrous strange, that they exhausted not the provision of the Countrey, rather then the waters thereof. For, as he maketh the account, and *Budeus de Asse* correcting the miscompute of Valla, delivereth it; if every man of the Army had had a chenix of Corne a day, that is a sextary and halfe, or about two pints and a quarter, the Army had daylie expended ten hundred thousand and forty medimna's, or measures containing six Bushels. Which rightly considered, the Abderites had reason to blesse the heavens, that Xerxes eate but one meale a day, and Pythius his noble hoste might with lesse charge and possible provision entertaine both him and his Army. And yet may all be salved, if we take it hyperbolically, and as wise men receive that expression in Job, concerning Behemoth, or the Elephant; Behold, hee drinketh up a River and hasteth not, he trusteth that hee can draw up Jordane into his mouth.

2. That Anniball eate or brake through the Alpes with Vinegar, may bee too grossely taken, and the Author of his life annexed unto Plutarch affirmeth, onely hee used this artifice upon the tops of some of the highest mountaines. For, as it is vulgarly understood, that hee cut a passage for his Army through those mighty mountaines, it may seeme incredible, not onely in the greatnesse of the effect, but the quantity of the efficient: and such as behold them, may thinke an Ocean of Vinegar too little for that effect. 'Twas a worke indeed rather to be expected from earthquakes and inundations, then any corrosive waters, and much condemneth the judgement of Xerxes, that wrought through Mount Athos with Mattocks.

3. The received story of Milo, who by daylie lifting a Calfe, attained an ability to carry it being a Bull, is a witty conceit, and handsomely sets forth the efficacy of Assuefaction. But surely the account had beene more reasonably placed upon some person not much

much exceeding in ſtrength, and ſuch a one as without the aſſiſtance of cuſtome could never have performed that act; which ſome may preſume that Milo without precedent artifice or any other preparative, had ſtrength enough to performe. For, as relations declare, he was the moſt pancraticall man of Greece, and as Galen reporteth, and Mercurialis in his Gymnaſticks repreſenteth, he was able to perſiſt erect upon an oyled planke, and not to bee removed by the force or protruſion of three men; and if that bee true which Atheneus reporteth, he was little beholding to cuſtome for this ability. For, in the Olympick games, for the ſpace of a furlong, he carryed an Oxe of foure yeares upon his ſhoulders; and the ſame day hee carried it in his belly; for as it is there delivered he eate it up himſelfe: Surely he had beene a proper gueſt at Grandgouſiers feaſt, and might have matcht his throat that eate ſixe pilgrims for a ſalad. In Rabelais.

4. It much diſadvantageth the Panegyrick of Syneſius, and is no ſmall diſparagement unto baldneſſe, if it bee true what is related by Ælian concerning Æſchilus, whoſe balde pate was miſtaken for a rock, and ſo was brained by a Tortoiſe which an Eagle let fall upon it. Certainely, it was a very great miſtake in the perſpicacity of that Animall, and ſome men critically diſpoſed, would perhaps from hence confute the opinion of Copernicus, never conceiving how the motion of the earth below ſhould not wave him from a knock perpendicularly directed from a body in the ayre above. Who writ in the praiſe of baldneſſe.

5. It croſſeth the proverb, and Rome might well bee built in a day; if that were true which is traditionally related by Strabo; that the great Cities Anchiale and Tarſus, were built by Sardanapalus both in one day, according to the inſcription of his monument, *Sardanapalus Anacyndaraxis filius, Anchialen & Tarſum unâ die edificavi, Tu autem hoſpes Ede, Lude, Bibe, &c.* which if ſtrictly taken, that is, for the finiſhing thereof, and not onely for the beginning, for an artificiall or naturall day, and not one of Daniels weeks, that is, ſeven whole yeares; ſurely their hands were very heavy that waſted thirteene yeares in the private houſe of Solomon; it may bee wondred how forty yeares were ſpent in the erection of the Temple of Jeruſalem, and no leſſe then an hundred in that famous one of Epheſus. Certainely, it was the greateſt Architecture of one day, ſince that great one of ſixe; an Arte quite loſt with our Mechanicks, and a work not to be made out, but like the walls of Thebes, and ſuch an Artificer as Amphion.

6. It had beene a ſight onely ſecond unto the Arke, to have beheld the great Syracuſia, or mighty Ship of Hiero, deſcribed in Atheneus; and ſome have thought it a very large one, wherein were to be found ten ſtables for horſes, eight Towers, beſides fiſhponds, Gardens, Tricliniums, and many faire roomes paved with Agath, and precious

ſtones; but nothing is impoſſible unto Archimedes, the learned contriver thereof; nor ſhall wee queſtion his removing the earth, when he findes an immoveable baſe to place his engine upon it.

7. The relation of Plutarch of a youth of Sparta, that ſuffered a Fox concealed under his robe to teare out his bowels, before he would either by voice or countenance betray his theft; and the other of the Spartan Lad, that with the ſame reſolution ſuffered a coale from the Altar to burne his arme; although defended by the Author that writes his life, is I perceive miſtruſted by men of judgement, and the Author with an *aiunt*, is made to ſalve himſelf. Aſſuredly it was a noble Nation that could afford an hint to ſuch inventions of patience, and upon whom, if not ſuch verities, at leaſt ſuch veriſimilities of fortitude were placed. Were the ſtory true, they would have made the onely Diſciples for Zeno and the Stoicks, and might perhaps have beene perſwaded to laugh in Phaleris his Bull.

8. If any man ſhall content his beliefe with the ſpeech of Balams Aſſe, without a beliefe of that of Mahomets Camell, or Livies Oxe; if any man make a doubt of Giges ring in Juſtinus, or conceives hee muſt bee a Jew that beleeves the Sabbaticall river in Joſephus. If any man will ſay he doth not apprehend how the taile of an African weather outweigheth the body of a good Calfe, that is, an hundred pound, according unto Leo Africanus; or deſires before beliefe, to behold ſuch a creature as is the Ruc in *Paulus Venetus*, for my part I ſhall not be angry with his incredulity.

9. If any man doubt of the ſtrange Antiquities delivered by hiſtorians, as of the wonderfull corps of Antæus untombed a thouſand yeares after his death by Sertorius; whether there were no deceipt in thoſe fragments of the Arke ſo common to bee ſeene in the dayes of Beroſus; whether the piller which Joſephus beheld long agoe, Tertullian long after, and *Bartholomeus de Saligniaco*, and *Borchardus* long ſince be the ſame with that of Lots wife; whether this were the hand of Paul, or that which is commonly ſhowne the head of Peter, if any doubt, I ſhall not much diſpute with their ſuſpicions. If any man ſhall not beleeve the Turpentine betwixt Jeruſalem and Bethlem, under which the Virgin ſuckled our Saviour, as ſhe paſſed betweene thoſe Cities; or the figtree of Bethanie ſhewed to this day, whereon Zacheus aſcended to behold our Saviour, I cannot tell how to enforce his beliefe, nor doe I thinke it requiſite to attempt it. For, as it is no reaſonable proceeding to compell a Religion, or thinke to enforce our owne beliefe upon another, who cannot without the concurrence of Gods Spirit, have any indubitable evidence of things that are obtruded; ſo is it alſo in matters of common beliefe; whereunto neither can we indubitably aſſent, without the cooperation of our ſenſe or reaſon, wherein conſiſt the principles of perſwaſion. For, as the habit of faith in Di-

vinity

vinity is an argument of things unſeene, and a ſtable aſſent unto things inevident, upon authority of the divine Revealer; So the beliefe of man which depends upon humane Teſtimony, is but a ſtaggering aſſent unto the affirmative, not without ſome feare of the negative. And as there is required the Spirit of God, and an infuſed inclination unto the one, ſo muſt the actuall ſenſation of our ſenſes, at leaſt the non oppoſition of our reaſons procure our aſſent & acquieſcence in the other. So when Euſebius an holy writer affirmeth there grew a ſtrange and unknowne plant neere the ſtatue of Chriſt, erected by his hemarroidall patient in the Goſpel, which attaining unto the hemne of his veſture, acquired a ſudden faculty to cure all diſeaſes. Although he ſaith he ſaw the ſtatua in his dayes, hath it found in many men ſo much as humane beliefe; ſome believing, others opinioning, a third ſuſpecting it might be otherwiſe. For, indeed in matters of beliefe the underſtanding aſſenting unto the relation, either for the authority of the perſon, or the probability of the object; although there may be a confidence of the one, yet if there be not a ſatisfaction in the other, there will ariſe ſuſpenſions; nor can we properly believe untill ſome argument of reaſon, or of our proper ſenſe convince or determine our dubitations.

And thus it is alſo in matters of certain and experimented truth: for, if unto one that never heard thereof, a man ſhould undertake to perſwade the affections of the Loadſtone, or that Jet and Amber attracteth ſtrawes and light bodies, there would be little Rhetorick in the authority of Ariſtotle, Pliny, or any other. Thus, although it be true that the ſtring of a Lute or Violl will ſtirre upon the ſtroake of an uniſon or Diapazon in another of the ſame kinde; that Alcanna being greene, will ſuddenly infect the nailes and other parts with a durable red; that a candle out of a Muſket will pierce through an inch board, or an Urinall force a naile through a planke, can few or none believe thus much without a viſible experiment. Which notwithſtanding fals out more happily for knowledge; for theſe relations leaving unſatisfaction in the hearers, doe ſtirre up ingenuous dubioſities unto experiment, and by an exploration of all, prevent deluſion in any.

Chap. XIX.

Of ſome relations whoſe truth we feare.

LAſtly, as there are many relations whereto we cannot afford our aſſent, and make ſome doubt thereof, ſo are there divers others whoſe verities we feare, and heartily wiſh there were no truth therein.

1. It is an unſufferable affront unto filiall piety, and a deepe diſcou-

ragement

ragement unto the expectation of all aged Parents, who ſhall but reade the ſtory of that barbarous Queene, who after ſhe had beheld her royall parents ruine, lay yet in the armes of his aſſaſſine, and carrouled with him in the skull of her father; for my part, I ſhould have doubled the operation of antimony, where ſuch a potion would not worke; 'twas an act me thinks beyond Anthropophagy, and a cup fit to be ſerved up onely at the Table of Atreus.

2. While we laugh at the ſtory of Pygmaleon, and receive as a fable that he fell in love with a ſtatua; wee cannot but feare it may bee true, what is delivered by Herodotus concerning the Ægyptian Pollinctors, or ſuch as annointed the dead, that ſome thereof were found in the act of carnality with them; from wits that ſay 'tis more then incontinency for Hylas to ſport with Hecuba, and youth to flame in the frozen embraces of age, we require a name for this: wherein Petronius or Martiall cannot relieve us. The tyranny of Mezentius did never equall the vitioſity of this Incubus, that could embrace corruption, and make a Miſtreſſe of the grave; that could not reſiſt the dead provocations of beauty, whoſe quick invitements ſcarce excuſe ſubmiſſion. Surely, if ſuch depravities there be yet alive, deformity need not deſpaire; nor will the eldeſt hopes be ever ſuperannuated, ſince death hath ſpurres, and carcaſſes have beene courted.

Who tied dead and living bodies together.

3. I am heartily ſorry and wiſh it were not true, what to the diſhonour of Chriſtianity is affirmed of the Italian, who after he had inveigled his enemy to diſclaime his faith for the redemption of his life, did preſently poyniard him, to prevent repentance, and aſſure his eternall death. The villany of this Chriſtian exceeded the perſecution of Heathens, whoſe malice was never ſo Longimanus as to reach the ſoule of their enemies, or to extend unto the exile of their Elyſiums. And though the blindneſſe of ſome ferities have ſavaged on the dead, and beene ſo injurious unto wormes, as to diſenterre the bodies of the deceaſed; yet had they therein no deſigne upon the ſoule; and have beene ſo farre from the deſtruction of that, or deſires of a perpetuall death, that for the ſatisfaction of their revenge they wiſht them many ſoules, and were it in their power would have reduced them unto life againe. It is great depravity in our natures, and ſurely an affection that ſomewhat ſavoureth of hell, to deſire the ſociety, or comfort our ſelves in the fellowſhip of others that ſuffer with us; but to procure the miſeries of others in thoſe extremities, wherein we hold an hope to have no ſociety our ſelves, is me thinks a ſtraine above Lucifer, and a project beyond the primary ſeduction of Hell.

4. I hope it is not true, and ſome indeed have ſtrongly denyed, what is recorded of the Monke that poyſoned Henry the Emperour, in a draught of the holy Euchariſt. 'Twas a ſcandalous wound unto Chriſtian Religion, and I hope all Pagans will forgive it, when they ſhall

reade

reade that a Christian was poysoned in a cup of Christ, and received his bane in a draught of his salvation. Had I believed Transubstantiation, I should have doubted the effect; and surely the sinne it selfe received an aggravation in that opinion. It much commendeth the Innocency of our forefathers, and the simplicity of those times, whose Laws could never dreame so high a crime as parricide: whereas this at the least may seeme to outreach that fact, and to exceed the regular distinctions of murder. I will not say what sinne it was to act it; yet may it seeme a kinde of martyrdome to suffer by it: For, although unknowingly he dyed for Christ his sake, and lost his life in the ordained testimony of his death. Certainely, had they knowne it, some noble zeales would scarcely have refused it, rather adventuring their owne death, then refusing the memoriall of his.

Many other accounts like these we meet sometimes in history, scandalous unto Christianity, and even unto humanity; whose verities not onely, but whose relations honest minds doe deprecate. For of sinnes heteroclitall, and such as want either name or president, there is oft times a sinne even in their histories. We desire no records of such enormities; sinnes should be accounted new, that so they may be esteemed monstrous. They omit of monstrosity as they fall from their rarity; for, men count it veniall to erre with their forefathers, and foolishly conceive they divide a sinne in its society. The pens of men may sufficiently expatiate without these singularities of Villany; For, as they encrease the hatred of vice in some, so doe they enlarge the theory of wickednesse in all. And this is one thing that may make latter Ages worse then were the former; For, the vicious examples of Ages past, poyson the curiosity of these present, affording a hint of sin unto seduceable spirits, and solliciting those unto the imitation of them, whose heads were never so perversely principled as to invent them. In this kinde we commend the wisdome and goodnesse of Galen, who would not leave unto the world too subtile a Theory of poysons; unarming thereby the malice of venemous spirits, whose ignorance must be contented with Sublimate and Arsenick. For, surely there are subtiler venenations, such as will invisibly destroy, and like the Basilisks of heaven. In things of this nature silence condemneth history, 'tis the veniable part of things lost; wherein there must never rise a Pancirollus, nor remaine any Register but that of hell.

Who writ *de Antiquis deperditis*, or of inventions lost.

And yet, if as some Stoicks opinion, and Seneca himselfe disputeth, these unruly affections that make us sinne such prodigies, and even sinnes themselves be animals; there is an history of Africa and story of Snakes in these. And if the transanimation of Pythagoras or method thereof were true, that the soules of men transmigrated into

species

ſpecies anſwering their former natures; ſome men muſt ſurely live over many Serpents, and cannot eſcape that very brood whoſe fire Satan entered; and though the objection of Plato ſhould take place, that bodies ſubjected unto corruption, muſt faile at laſt before the period of all things, and growing fewer in number, muſt leave ſome ſoules apart unto themſelves; the ſpirits of many long before that time will finde but naked habitations; and meeting no aſſimilables wherein to react their natures, muſt certainely anticipate ſuch naturall deſolations.

FINIS.

Some errors in interpunctions or pyntings the advertency of the Reader may correct: what others, by reaſon of the obſcurity of the Copy have moſt materially eſcaped, we deſire him thus to rectifie.

PAge 2. line. 22. for poſterity, reade poſteriority. p. 1. l. 21. for underſtood, miſunderſtood. p. 21. l. 10. for lives, lines. p. 33. l. 22. for 25, 20. p. 35. l. for induce, to induce. p. 38. l. 41. for miſerable, miſerableſt. p. 59. l. 39. for Iron, from. p. 61. l. 28. for intereſt, interſect. p. 62. l. 13. read which with alacrity. p. 67. l. 41. for any, and. p. 76. l. 29. for ye, it. and after, for the Art, by the Art, for inciſion, inſition. p. 95. l. 16. for it, yet. p. 105. l. 16. for without, not without. p. 107. l. 24. for whoſe, whole. p. 117. l. 24. for conceded, concealed. p. 134. l. 2. for among, within. p. 140. l. 24. for Elychnions, Elychnious. p. 150. l. 30. for pervinum, perulum. p. 159. l. 40. reade corpulency, and dele it. p. 180. l. 15. for ſight, ſite, and reade inangular. p. 194. l. 17. for matter, water. p. 199. l. 14. for our, Cur. p. 202. l. 10. for India, Judea. p. 204. l. 15. reade amitted. p. 216. l. 34. reade inconfirmed. p. 222. l. 33. for ſeven, ſeventeene. p. 226. l. 28. for Longitude, Declination. p. 235. l. 15. reconveyed. p. 238. r with the miſchiefe p 259. l. 17. for are, or. p. 269. l. 29. for about, above. p. 271. l. 1. r purged. p. 285. l. 14. r graſting. p. 287. l. 8. dele of. p. 292. r convexity. p. 308. l. 15. for are, or. p. 320. l. 31. r minious.